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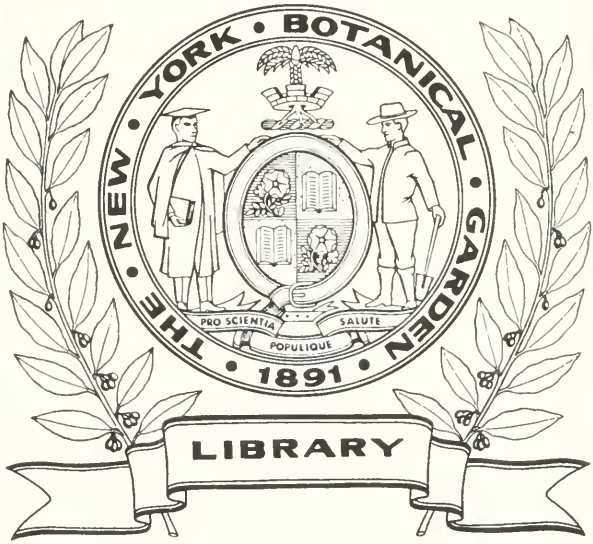
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# CHARACTERES ESSENTIALES

FAMILIARUM AC TRIBUUM

## REGNI VEGETABILIS ET AMPHORGANICI

AD LEGES TETRACTYDIS NATURAE CONSCRIPTI

ACCEDIT

ENUMERATIO GENERUM MAGIS NOTORUM

ET ORGANOGRAPHIAE SUPPLEMENTUM

---

AUCTORE

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ET PROFESS. EMERITO.

Felices agricolae, bona si sua norint!

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VIRO

PERILLUSTRI AC CELEBERRIMO

ROBERTO BROWN

MUSEI BRITANNICI PRAEFECTO

NATURAE SCRUTATORI SINCERRIMO

SACRUM.

## PROPOSITI RATIO.

> Legi aliquot EJUS vestigia per creata rerum, in quibus omnibus, etiam in minimis ut fere nullis, quæ Vis! quanta Sapientia! quam inextricabilis Perfectio!
>
> Car. à Linné, *Imperium Naturae.*

Certum ordinem Rebus naturalibus interesse, quamplurimis convincimur, verum hujus ordinis, quo recte ligentur objecta innumera Physiographiae universae, enucleatio perarduum semper erat negotium, quapropter systema naturale, praeprimis phytologicum, usui practico adaequatum, hactenus summe desideratur, et cujus auctoris systema vegetabilium naturale, quod filum Ariadneum beatus dixit Linnaeus, praeceptorem et tironem sequi juvabit? Celeberr. De Candolle omne regnum vegetabile in 4 coëgit classes, in prima sua classi Dicotyledonum duas fere trientes Regni (fere 60000 species) colligens, quod in systematibus a Cl. Lindley et Schleiden projectis iterum reperimus. Cl. Bartling 60 classes stabilivit, quem numerum Endlicher, Meissner et Ad. Brongniart (1843) augendo, ad 68 classes tulere; quinimo numerus ordinum natural. jam ad 400 et ultra ascendit, ne dicam de familiis 77 Algarum et

64 Fungorum, a Kützingio et Corda stabilitis. Quaeso, an talem copiam classium et ordin. auctor ipsemet facile memoria condere posset? eo magis tironi horridam. Sunt qui naturalem corporum coordinationem flocci pendent, minime votis piis Magni Linnaei respondentes, qui *diu circa methodum naturalem laboravit*, *perficere non potuit*, *continuaturus dum vixerit*; nec ille status juvenilis Scientiae, quo respirabat, scopo attingendo par fuit.

Ne itaque gravissimum laborem novae coordinationis objectorum Regni vegetabilis et amphorganici, a me stabiliti, incassum moliar, lento passu nec fatorum propositi tantae molis ignarus processi, observans assiduo per 7 lustra et quod excurrit, objecta Scientiae amabilis, hujusque studii fructus expositurus, denuo revisi ultra 40000 variorum corporum vegetabilium et amphorganicorum, animum praeprimis ad ea attendens, quae ordinem naturalem magis dilucidant, nec operibus generalibus solis supersedens, consului monographias optimas, eheu! non omnes, inspexi plantas siccas et vivas, quas territorium plurium Europae plagarum mihi peregrinanti obtulit, in metropoliis ubique acceptissimo et consilio celeberrim. Phytologorum et Histologorum adjuto, qui et thesauros scientiae paternos mihi patefecere multaque dona dedere, grato semper revolvenda animo.

Systema aeque tironibus ac Magistris Scientiae magis acceptum erit, si objecta numerosa ad generales, non valde inaequales, divisiones et subdivisiones conformes distribuantur; quapropter omne Regnum vegetabile, exclusis Fungis et Algis, ad 12 classes et quamlibet classim in

ordines 4 diduximus, his familias 187 subordinavimus earumque subdivisionem conformem in tribus aliasque sectiones itidem tentavimus. Familiarum itaque numerum ad multo minorem reducens, quod jam a Reichenbachio aliisque tentatum fuerat, nec temera manu haec exequens in eo studui, ut familiae majores illi Rosacearum polymorphae quodammodo respondeant, minime contendens, novum tentamen probe absolutum esse. Familiae plures, ad valorem tribuum reductae, nec non aliae sectiones, quibus magis occupatus fui, justo profusius describuntur, ut ratio combinationis judici pateat. Ne numero quaternario permodum indulgere videar, admisi et alias divisiones, legibus Tetractydis naturae, pag. 7 expositis, consonas; nulla enim regula absque exclusione naturae imponenda, utpote comparationes novae conformitati systematis procul dubio favebunt.

Physiologia plantarum hodierna, observationibus splendidis illustrata, terminologiae imperat reformationem, jam a Cl. Schleiden, Unger et Endlicher projectam; at controversiae de foecundatione plantarum hucdum continuantur et novi termini partim inter se dissentiunt, nec generaliter accepti sunt; quapropter characteres propositos solito modo adumbravimus, introductis quibusdam novis terminis, qui idonei et necessarii ad descriptionem organorum magis exactam et succinctam visi fuêre. Organographiae Supplementum additum illustrat et novos terminos, in opusculo admissos, et provisorios, organologiae novae magis consonas.

Ne volumen libri permodum extendatur, adhibui quaedam signa: < exclusionis, -+— plus

v. minus, = aequale, o nulla, ∞ multa, aliaque jam usitata, ac sectionibus ea modo genera adscripsi, quae ad illas illustrandas sufficere videbantur, et ea, quae magis nota ac in hortis botanicis v. herbariis saepius obveniunt aut Floram Rossiae ornant; tali modo et conspectui sectionum faciliori et usui tironum commodo sat provisum fore speramus. Auctores generum in indice alphabetico adducti sunt.

Qui strenue omnes proprietates corporum amphorganicorum perpenderit, nec contentus esset illa superficiali notione, quae Polyporum et Acalepharum indolem animalem permodum extollit, vegetabilem vero praetervidet, et contrarium de Algis et Fungis affirmat, forsan mecum conveniet de necessitate Regni intermedii stabiliendi; nec primus sum, qui de illo cogitavi, eoque magis, quum omnes conatus, limites inter plantas et animalia definiendi, hucusque irriti fuêre.

Multa quidem nostra in aetate usque ad unguem examinata sunt, at multa adhuc examinanda et legitime interpretanda sunt, antequam systema perfectum et usui commodum projiciatur; impressio libri nimis protracta eos adduxit defectus, qui in characteribus Hydropteridum, Rhizanthar., Strobilantharum, Penaeacearum aliisque invenientur, in posterum rectificandi. Multa igitur adhuc praestanda sunt et conatus nostri forsan aliquid suppeditabunt illi Artifici eximio, qui bene absolverit methodum et omnibus magnus esset Apollo.

# CONSPECTUS SYSTEMATIS.


REGNUM VEGETABILE.

Circulus I. Sporophoræ.

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## REGNUM VEGETABILE.

Circulus I. SPOROPHORAE (Acotyledones, Cryptogamae).

# Classis I. Protophyta nob.

Vegetabilia sporophora, minora, parasita v. terricolæ; cellulis fulcrantibus disjunctis v. compactis in thallum, ⊣— conspicuum v. in caulem foliatum et radicantem, acrobryum. *Spiriductus* vix ulli. Antheridia in Hepaticis et Muscis:

## *Ordo I. Sclerogasteres* (Corda ◁).

*(Hypoxyla, Pyrenomycetes).*

Protophyta, e variis plantarum partibus, matrice, fungis, animalibus mortuis v. terra oriunda, immersa v. adnata, simpl. v. gregaria, minima v. plures pollices longa; hypothallo, thallo et fructu ⊣— perfectis. *Hypothallus* (mycelium) demersus v. superficialis, byssaceus, fibrillosus, rhizomorphus, maculæformis v. latissimus, membranac., crustaceus, tuberiformis, ⊣— durabilis v. obsoletus. *Thallus* (stroma) ⊣— determinatus, nullus, maculæformis v. late effusus, crassus v. tenuis, superficialis, hypophlæodes v. conceptaculo proprio inclusus, sessilis v. stipitatus, planus, convexus, globosus, cupulæformis, v. elongatus — decumbens v. caulescens et ramosus, carnosus, coriac. v. lignosus, solidus v. cavus, medulla et cortice ⊣— distinctis. *Fructus* e thallo, hypothallo v. matrice oriundi, demersi, v. superficiales: *sporangium* (perithecium) ⊣— durum, primitus clausum, demum

rima simpl. v. ramosa, frustulatim, poro v. ostiolo apertum v. circumscissum, sphæricum, lageniforme, compressum v. depressum, elongato-erectum v. prostratum, quibusdam flexuosum, ramosum, dimidiato-superum, v. nullum (nucleo tunc 1-∞-loculari), coloris varii sæpius nigri. *Nucleus* sporangio inclusus v. subnudus, gelatinosus v. firmulus, ascis sporophoris, v. sporis nudis, passim pedicellatis, farctus, demum deliquescens v. pulveraceus et serius v. ocyus evacuandus v. forma glebulæ aut cirrhi prosiliens, mox induratus et fatiscens; sporæ simpl. v. compositæ. — Familiae 4, genera 70? species ultra 2,000, denuo scrutandæ:

FAM. 1. SPHÆRONEMACEÆ Corda ≺.

Thallus et hypothallus sæpe inconspicui. Sporangia globosa, lageniformia v. scutata, acropora ≺. Nucleus gelatinosus, sporas glomeratas, simpl. ≺ dein erumpentes, fovens: *Depazea? Coniothyrium, Phoma, Leptothyrium, Strigula, Actinothyrium, Apiosporium, Microthecium, Dilophospora, Septoria, Acrospermum, Sphaeronema, Polystigma, Ceuthospora....*

FAM. 2. PROSTHEMIACEÆ *nob.*

Thallus minus conspicuus. Sporangium poro, rima, stellatim dehiscens, cupulare v. kionophorum. Sporæ simpl. v. compositæ, pedicellatæ, pedicellis (basidiis) in hymenium periphericum v. discoideum confertis:

a. *Melanconieae:* nucleus kionophorus ≺; sporæ simplices pedicellatæ: *Sphaeropsis, Cryptosporium, Nemaspora, Piptostromum, Melanconium, Stegonosporium.*

b. *Prosthemieae:* Sporang. corneum, asteroschizum ≺; pedicelli sporis compositis, solitar. v. verticillatis: *Sporocadus, Pestalozzia, Prosthemium.*

c. *Excipuleae:* sporang. plerumque regmoschizum v. cupulare; nucleus discoid.; sporæ simpl. sæpius fusiformes:

*Labrella*, *Endotrichum*, *Schizothecium*, *Pilidium*, *Excipula*.

d. *Phragmotricheae:* sporang. rhegmoshizum; sporæ compositæ et concatenatæ: — *Phragmotrichum*.

FAM. 3. HYSTERIACEÆ. Corda.

Thallus inconspicuus. Sporangium rima unica, pluribus v. radiatim dehiscens, quibusdam operculatum v. subdimidiatum. Nucleus discoideus, ascis polysporis et paraphysibus stipatus:

a. *Stegilleae*: Sporangium cupulare, operculatum: *Stegilla* Rchb.

b. *Phacidieae*: sporang. rotundatum v. subdimidiatum, multirimosum: *Rhytisma*, *Heterosphaeria*, *Phacidium*; *Actidium*, *Cliostomum*.

c. *Hysterieae:* sporangium unirimosum, sporæ simpl., passim elongatæ: *Limbosia*, *Ailographum*, *Hysterium*, *Sporomega*, *Lophium*.

d. *Glonieae:* sporang. unirimosum, passim compositum; sporæ septatæ (v. didymæ): *Asterina*, *Hysterographium*, *Glonium*.

FAM. 4. SPHÆRIACEÆ.

Thallus v. hypothallus obsoletus v. ad pollices plures elatus, simpl. v. ramosus. Sporangia acropora, sæpius globosa v. lageniformia. Nucleus gelatin. v. carnosus, ascos 8-sporos ≺ et paraphyses ≺ fovens. *Ascochyta*, *Sporotheca*, *Melanospora*, *Chætomium*, *Sphæria*, *Hypospila*, *Dothidea*, *Cucurbitaria*, *Hypocrea*, *Valsa*, *Poronia*, *Hypoxylon*, *Thamnomyces*, *Xylaria*, *Cordiceps*. . . .

## *Ordo II. Lichenes.*

Vegetabilia cryptochlorea, e saxis, terra, cortice, ligno v. muscis oriunda, *hypothallo*, e sporis, nec gonidiis pronato, vernicoso, pulveraceo, byssino, fibrilloso v.

membranaceo, thallum interdum excedente v. sterili, cum thallo confuso v. nullo. *Thallus* superficialis v. erumpens, ⊣— limitatus, ope gomphi centralis, fibrillarum adligantium v. immediate adglutinatus, pulveraceus, granulosus, crustaceus, squamulosus, foliaceus, filamentosus, fruticulosus, cavus v. solidus, passim mutilatus v. abnormis, membranaceus, coriac cartilagin., spongiosus, gelatinosus (si humefit), ⊣— durus et crassus, coloris varii, ⊣— durabilis, quibusdam obsoletus v. in podetia, a thallo distincta, ascypha v. scyphifera, sterilia v. fructifera evolvendus. In thallo perfectiori - superficiali strata distinguuntur tria: *a) corticale*-superum v. ambigenum, e cellulis globosis v. polyëdricis conflatum; *b)* str. *medullare*, internum v. inferum, e cellulis tubulosis v. filiformibus constans, in Lichenib. crustaceis vix distinctum; *c)* str. *gonimicum*-subcorticale, constans e vesiculis minutis, discretis, muciparis, propagativis (gonidiis), quæ crumpentes et aggregatæ soredia v. granula prolifica effigurant — aut in squamulas, matri adhærentes (anablastemata), in excrescentias dendroideas, glomerulos, sæpe magnos v. verrucas nigrescentes (cephalodia), tandem inertes, transfigurantur. — *Fructus* (apothecia) superficiales v. thallo immersi aut illo præcociores v. e hypothallo oriundi, sessiles v. pedicellati, formam peltæ, scutelli, urceoli, vesiculæ sphæricæ, verrucæ, lirellæ v. disci, passim marginati v. gyroso-plicati, varii coloris, præ se ferunt: *sporangium* (perithecium) primitus apertum, e thalli strato corticali v. medulla v. ambobus ortum, *excipulo* thallode (et verruca fructifera) v. proprio præditum, completum v. dimidiatum-superum, quibusd. lageniforme v. cupulare, includit *nucleum* globulosum, subhyalinum v. coloratum, solidum v. gelatinosum, serius v. ocyus protrudendum, tandem gelatinoso-v. pulveraceo-fatiscentem, — v. *laminam* proligeram, quæ e hypothecio merenchymatico, strato thalli corticali, medullari v. gonimico imposito, et strato sporophoro constat. Hic nucleus et lamina gerunt sporas agglomeratas, nudas v. ascis

inclusas, octonas, binas, quaternas v. duodenas et paraphysibus stipatas; ni, fructu abortivo, in tubercula, maculas solidas v. pulveraceas aut massas paraphysophoras, asporas deformentur. Sporæ simplices (vesiculæ granuliferæ c. gutta oleacea) v. compositæ, 2-16-cellulatæ et muriformes, germinantes integræ, fila edunt, quæ solo arcte adhærent v. illud penetrant et hypothallum paeformant (proëmbryon durabilius). Familiæ 4 (ab auctoribus ad 15 multiplicatæ) sequentes:

FAM. 5. ARTHONIACEÆ. *nob.* (*Coniopsorae* Rchb. ⊰).

Lichenes rudimentarii, enigmatici, simplicissimi, corticisaxicolæ. Thallus obsolet. v. indefinitus, pulvereus, floccosus, tenuissim. v. crustaceus. Sporæ simpl. v. compositæ, pulverulentæ v. coacervatæ in cæspitulos v. maculas reticulatas, denudatas. v. in tuberculis hypophlæis v. emersis, nigris v. albis, ascigeris? nidulantes; (hypothecium et perithec. nulla): *Pulveraria*, (*Variolaria* — vix genus autonomum?) *Arthonia*, *Incillaria*, *Arthonaria*; — *Coniocarpon*....

FAM. 6. LIMBORIACEÆ. *nob.* (*Gasteropsorae* Rchb. ⊰).

Lichenes exigui v. majores, sæpius corticicolæ, quidam lignisaxi-terricolæ (heterobii). Thallus tenuis, crust., leprosus, adnatus, rarius liber, membranac. et discolor v. obsoletus. Apothecia (fructus) thallo immersa v. prominula, globosa, angulata, elongata (lirellæ), ramosa v. gyrosa, discreta v. confluentia (multilocularia) et strato medullari protuberante inclusa, dein ⊣— — aperta v. papillâ ostiolata, passim heterogeneâ, prædita, excipulo proprio v. thallode (verruca), perithecio (sporangio) nullo v. dimidiato, supero, infero v. laterali sæpius carbonaceo, quibusdam rostrato et poro communi hiante. Nucleus globosus, linearis, anfractuosus v. laminaris, gelatinosus, dein induratus, diffluens v. fatiscens, quibusd. primitus velatus, sporas nudas compositas, coloratas ⊰? emittens v. asciger:

a. *Limborieae nob.* plerumque corticicolæ, gymnosporæ?, thallo adnato, depauperato ◁, apothec. globosis, discretis, acroschizis v. elongatis, flexuosis, longe-rimosis, quibusd. strato medullari protuberante inclusis v. patellaribus: — *Coniangium*, *Ustalia*, *Lecanactis*, *Opegrapha*, *Graphis*. — *Sarcographa*, *Chiodecton*, *Glyphis*; — *Urceolaria*, *Thelotrema*, *Limboria*...

b. *Umbilicarieae:* sæpius saxicolæ, gymnosporæ?, thallo cartilag. — membranaceo, centro v. fibrillis plurib. affixo, apotheciis orbicularib. superficiariis, apertis, lamina sporigera gyrosa v. æquabili: *Umbilicaria (Gyrophora)*, *Pyxine*.

c. *Verrucarieae nob.* heterobiæ; ascosporæ?, thallo crustac. adnato ⊣— conspicuo; verrucis fructiferis papillato-ostiolatis, discretis v. confluentibus, quibusd. rostratis et poro communi hiantibus: — *Diorygma*? *Pyrenothea*, *Verrucaria*, *Pyrenastrum*; — *Sphæromphale*, *Trypethelium*, *Mycoporum*, *Astrothelium*....

d. *Endocarpeae*: saxi-terri-corticicolæ, ascosporæ?, thallo crust. adnato v. libero membranaceo; verrucis fructiferis immersis v. prominulis, excipulo thallode clauso, ostiolo ⊣— producto: — *Pertusaria*, *Thecaria*, *Sagedia*, *Endocarpon*.

FAM 7. LECIDEACEÆ *nob.* (*Podetiopsorae* Rchb.).

Lichenes minuti v. mediocres, sæpius terri-saxi-lignicolae. Thallus crustac., squamuloso-foliaceus, granulosus v. obsoletus; in podetia ⊣— longa, solida v. fistulosa, obsoleta v. cum thallo confluentia abiens. Apothecia primitus aperta ◁ c. hypothecio conico, globoso v. deplanato, lamina sporigera durabili v. fatiscente obducto; excipulo proprio marginante v. nullo, raro thallode clauso, demum acroschizo:

a. *Calycieae:* minutæ, thallo subleproso v. o; prodetiis gracillimis, apothec. primitus apertis, glob. v. conicis, fatis-

centib.; excipulo marginante v. o: — *Trachylia*, *Calycium*, *Coniocybe*.

b. *Sphærophoreæ*: thallo in podetia coralloidea ramosissima abeunte; apothecia terminalia, excipulo thallode, hypothecio conico v. deplanato, lamina pulverulenta, nigra: — *Sphærophoron*, *Siphula*.

c. *Lecideeæ*: thallo crustac. v. squamuloso-foliaceo; apotheciis subsessilib. v. brachypodis; hypothecio subgloboso, lamina sporigera (hymenina) durabili obducto; excipulo proprio marginante v. nullo: — *Lecidea*, *Patellaria* (*Biatora*), *Bæomyces*.

d. *Cladonieæ*: thallus crust. v. squamul.-foliaceus; podetia elongata, fistulosa v. solida, simplicia, scyphifera v. ramosissima; apothecia terminal., hypothecio convexo, lamina durabili, excip. proprio v. nullo: — *Cenomyce*, *Cladonia*, *Stereocaulon*.

FAM. 8 PARMELIACEÆ *nob.* (*Apotheciopsorae* Rchb.).

Lichenes ad saxa, terram v. arbores oriundi, minuti v. maximi. Thallus crust., granulosus v. membranaceus, adnatus v. adscend. et sæpius discolor — v. fruticulosus, cortice et medulla distinctis. Apothecia prim. clausa, dein scutellaria v. urceolaria, hypothecio simpl. v. duplici, excipulo thallode ⊰, laminam ascigeram, ⊣ — crassam velante v. marginante, rarius evanido:

a. *Collemeæ*: thallus gelatinosus, similaris, membranaceus v. in elementa sua (filamenta, granula) dissolutus; apothecia sphærica nuda v. scutellaria, excip. thallode confuso ⊰ v. proprio: — *Micarea*, *Ephebe*, *Collema*, *Leptogium*.

b. *Parmelieæ*: thall. crust. adnat. v. membranac., horizontalis v. adscend. et discolor; excipulum thallodes primitus connivens, dein cupulare, marginans, brachypodum, hypothecio et ascis perfectis ⊰: — *Gyalecta*, *Dirina*, *Parmelia*, *Sticta*, *Peltigera* (Peltidea).

c. *Cetrarieæ*: thall. verticalis, similaris, cartilagineo-rigidus, membran. v. subteres; apothecia explanata, subterminal. v. lateralia, lamina ascigera inæquabili, ascis imperfectis?: — *Cetraria, Ramalina, Roccella.*

d. *Usneeæ:* thallus fruticulosus, medulla stuppea v. fibrosa; apothecia terminal. v. lateralia: — *Evernia, Alectoria? Usnea.*

Nota. Genera, quorum auctores et synonyma cl. Endlicher et Reichenbach indicant, et quædam ommissa — examine novo refundenda et plura reunienda?

Sclerogasteres et Lichenes, a phytologis passim obiter tractatos, fusius adumbravimus. Primi quibusdam notis ad Hymenomycetes vergunt et fructu perfectiori eminent, illi Lichenum subanalogo, quibuscum et evolutionis processu magis conveniunt, observante Celeb. Klotzsch. Lichenes, e contra, Algis subsimiles et thallo perfectiori, passim sterili v. solis gonidiis propagando, insignes, quibusdam formis nexum naturalem cum Hepaticis frondosis demonstrant.

## *Ordo III. Hepaticae.*

Plantulæ annuæ v. perennes, passim Lichenes v. Muscos æmulantes, acrobryæ, spiriductibus destitutæ, plerumque virides, procumbentes et radicellosæ. Cormus in frondem homogeneam v. nervo, e parenchymate strictiori formato, percursam, aut in caulem et folia +— — discreta, disticha, passim lobata, dentata, auriculata v. serie tertia foliorum minutorum (amphigastria) aucta et quibusdam stomatiis prædita, evolvitur, ope gemmarum et florum diclinium reproducendus. *Antheridia* (utriculi, muco granuloso pleni) frondi immersa v. in disco proprio marginato aggregata, aut axillaria et passim bracteata. *Pistillidia* solitaria v. in receptaculo aggregata, nuda v. involucro, involucellis et paraphysibus stipata, gynodermide stylifera solubili et ruptili,

raro deficiente, fructus maturi pedicellum, demum elongatum v. brevissimum vaginante (calyptra basilaris). *Sporangia* ruptilia v. dentatim dehiscentia, sæpius 4-2-valvia, raro columellata, sporis liberis, simplic. (vesiculis nucleiferis) et plerumque filis intus spiraliter striatis, parietalibus (elateres) plena.

FAM. 9. RICCIACEÆ.

Plantulæ hygrobiæ, annuæ ☿, fronde crassiuscula, limo adpressa v. aquæ innatanti, passim discolori et lacunulis aëreis prædita, sub epidermide distincta. Antheridia immersa, ostiolo prominente, passim styloso. Pistillidia di-monœca, immersa v. superficialia, quibusdam involucro et involucellis stipata. Sporangia calyptræ innata v. libera, globosa, ruptilia, sporis hemisphæricis v. angulatis, absque elateribus: — *Riccia*, *Sphaerocarpus*, *Oxymitra*, *Corsinia*, *Sedgwickia*.

FAM. 10. MONOCLEACEÆ. *nob.* s. Anthoceroteae.

Plantulæ annuæ frondosæ, rarius foliatæ, epigeæ v. epidendræ, fronde enervi v. nervosa, epidermide discreta nulla. Involucra frondi continua, cyathiformia v. patellaria, c. antheridiis — v. tubulosa c. pistillidiis solitariis. Sporangia longissima, teretia, bivalvia, cum columella setiformi persistente, sporas subtetraëdras et elateres simpl. v. ramosos gerente: *Anthoceros*, *Monoclea*, *Cladobryum*.

FAM. 11. MARCHANTIACEÆ.

Herbulæ perennes, frondosæ, epidermide porosa, subtus squamulosa et radicante. Antheridia frondi immersa v. in discis sessilib. v. pedicellatis. Receptacula pedunculata, subtus v. in ambitu pistillidia involucrata v. involucellata gerentia, Sporangia pedicellata, ore dentato v. circumscisso, raro 4-fido, elaterophora, calyptra acroschiza v. evanida.

a. *Targionieae:* pistillidia e pedunculo frondi innato (nervo) infero, involucro coriaceo bifido: — *Targionia, Cyathodium.*

b. *Marchantieae:* pistillidia e pedunculis liberis, superis: *Grimaldia, Fimbriaria, Fegatella, Lunularia, Plagiochasma, Rebouillia, Dumortiera, Marchantia....*

FAM. 12. JUNGERMANNIACEÆ.

Herbulæ ann. v. perennes, frondosæ v. foliatæ, passim cum amphigastriis. Antheridia sparsa, immersa. Pistillidia calyptrata, solitaria, raro plura, involucrata et passim involucellata. Sporangia pedicellata, 4-valvia, raro univalvia, elaterophora: Tribus 8, Nees ab E.: *Metzgeria, Aneura, Blasia, Blytia.... Lejeunia, Frullania, Radula... Ptilidium... Sendtnera... Herpetium, Calypogeia... Geocalyx, Saccogyna... Gymnoscyphus, Jungermannia, Plagiochila... Alicularia, Gymnomitrium...*

## *Ordo VI. Musci.*

Plantæ minimae et pedales, plerumque perennes, caule radicelloso, passim stolonifero et gemmas innovantes, terminales v. axillares, nec non deciduas, agente, phyllodiis parenchymatosis, enerviis v. 1-2-nerviis, integerrimis v. serratis; spiriductus nulli, stomatia paucis. *Flores* axillares v. terminales, dioeci, monœci v. androgyni, involucrati: *antheridia* apice hiantia, fovillam? granulosam fundentia et paraphysibus stipata; *archegonium* (pistillidium) fertile cum abortivis, gynodermide stylifera, solubili et basi utplurimum ruptili. *Sporangium* (theca) calyptratum, gynophoro (seta) +— longo, basi vaginulato, superne passim in apophysin tumente, suffultum, plerisque operculo solubili et peristomio simplici 4-8-16-32-dentato v. duplici (dentato et ciliato), membrana intima in columellam, passim alatam, corrugata, et sporis, e

diploë sporangii ortis, quæ germinantes proëmbryon confervoideum effigurant. — Species millenæ, genera 125? ad familias et tribus plures conferendæ (?).

FAM. 13. SPHAGNACEÆ. (Ångström).

Musci anomali, cæspitosi, rufo-nigricantes v. albidi, phyllodiis imbricatis, enerviis ⊰, calyptra circumscissa. Sporangia brachypoda, fissuris 4 longitudinalibus dehiscentia, operculo adnato, v. cupularia, operculo deciduo: *Andreæa;* — *Sphagnum.*

FAM. 14. DICRANACEÆ *nob.*

Musci acrocarpi ⊰ minores, calyptra basi circumscissa, operculo solubili, rarius persistente, stomate annulato nudo v. peristomio simplici, rarius duplici:

a. *Phasceæ: Archidium*, *Phascum*, *Bruchia*, *Voitia*...

b. *Dicraneæ: Gymnostomum*, *Hymenostomum*, *Hedwigia;* — *Pottia, Anacalypta;* — *Desmatodon*, *Trichostomum*, *Barbula; Weissia*, *Didymodon*, *Trematodon*, *Dicranum*....

c. *Grimmieæ: Racomitrium*, *Grimmia*, *Schistidium;* — *Encalypta ;* — *Zygodon.*

d. *Ptychomitrieæ* nob. *Tetraphis*, *Tetrodontium ;* — *Orthotrichum, Glyphomitrium, Ptychomitrium*, *Coscinodon*...

FAM. 15. BRYACEÆ.

Musci acrocarpi, majores, operculo solubili, peristomio duplici, rarius simpl. v. nullo:

a. *Buxbaumieæ: Buxbaumia*, *Diphyscium.*

b. *Splachneæ: Oedipodium*, *Discodon*, *Tayloria*, *Tetraplodon*, *Splachnum.*

c. *Bryarieæ: α. Funarieæ: Physcomitrium*, *Enthostodon*, *Funaria.* — *β. Bartramieæ: Oreas*, *Catoscopium; Glyphocarpa*, *Bartramia*, *Philonotis.* — *γ. Meesieæ: Amblyodon*,

*Meesia, Paludella. — δ. Bryeae: Mnium, Cinclidium, Bryum, Mielichhoferia, Orthodontium, Timmia, Aulacomnion. . .*.

d. *Polytricheae: Atrichium, Oligotrichum, Pogonatum, Polytrichum.*

FAM. 16. HYPNACEÆ.

Musci pleurocarpi ⊀, calyptra basi circumscissa, operculo solubili, peristomio duplici, simpl. v. nullo:

a.? *Schistostegeae: Schistostega.*

b. *Fissidenteae: Fissidens, Octodiceras.*

c. *Fontinaleae: Cinclidotus; Fontinalis, Dichelyma.*

d. *Hypneae: Hypnum, Fabronia, Pterigynandrum, Anacamptodon, Leskea, Anœctangium, Neckera, Daltonia, Leucodon, Leptodon, Climacium, Hookeria; — Hypopterygium, Racopilum.*

Bryologos plures, Bruch et Schimper præprimis, consulentes talem Muscorum dispositionem *provisoriam* dedimus, antequam Auctores Bryologiæ europeæ, notis summatim conceptis, familias magis naturales et plures? determinaverint.

## Classis II. Pteridophyta *nob.*

Plantæ sporophorae, passim excelsæ, caudice radicante, caule, foliis et spiriductibus + — excultis. Antheridia nulla v. problematica.

### *Ordo I. Hydropterides.*

Hbæ aquaticæ, caule foliato, axi ligneo, spiriductibus veris et annulatis prædito. Sporocarpia ad basin foliorum v. inter fibrillas radicales sita, involucro ruptili v. valvari, 1-4-∞-loculari, sporangia et pollinaria fovente, quæ decidua foecundationem in aqua persolvunt (Nägeli).

FAM 17. SALVINIACEÆ.

Hbæ natantes, ramis pinnatis v. radiatis, foliis alternis, integerrimis, astomis. Sporocarpia ad bases ramorum v. inter fibrillas radicales sita, evalvia, dimorpha, monocca: alia pollinariis pedicellatis, alia sporangiis monosporis fœta: — *Azolla, Salvinia.*

FAM 18. MARSILEACEÆ.

Hbæ repentes, hygrobiæ, foliis alternis, abortivis v. quadrisectis, flabellinerviis, stomatosis, novell. circinatis. Sporocarpia uniformia, axillaria v. petiolaria, 4-locularia v. bilocularia et transversim plurilocellata, semiquadri- v. bivalvia, sporangiis monosporis et pollinariis plena: *Pilularia*, *Marsilea.*

## *Ordo II. Selagines.*

Caulis corticatus, axi ligneo, spiriductibus veris, annulatis v. scalariformibus praedito, fasciculos ad phyllodia simplicia et rhizonia emittente. Organa fructificationis homo-dimorpha.

FAM. 19. ISOËTACEÆ.

Hbæ submersæ: truncus depressus, axi parvo, fasciculos spiriductuum per corticem arcuato-radiatim in phyllodia et rhizonia emittente. Phyllodia subulata lacunosa, basi excavata, fovent sporocarpia bracteolata, multilocellata, pollinariis et sporis fœta: — *Isoëtes.*

FAM. 20. LYCOPODIACEÆ.

Hbæ v. frutices, Muscos, Jungermannias, imo Filices æmulantes, dichotomo-ramosi ⊀, radice primaria et radiculis secundariis. Caulis ligno vasculoso centrali, ⊣ — duro et cortice crasso, laxiori præditus, novellus vix circinatus, phyllodiis parvis, confertis, integris, uninerviis, homo- v. dimorphis. Organa fructificationis, e foliis v. bracteis oriunda, homo- v. dimorpha: pollinaria 1-(2-3)-locularia; sporangia unilocularia, minima v. majora, solitaria, 3-4-cocca, 3-4-spora. Spec. 279? — *Psilotum*, *Thmesipteris*, *Selaginella*, *Lycopodium.*

## *Ordo III. Filices.*

Plantae pusillæ (bryoideæ) v. Palmis excelsis similes, iisque elegantiores, glabræ v. pilis simpl. stellatis, ramosis, glandulosis, v. in paleas minimas v. sesquipollicares, fuscas, flavas, albidas v. nigrescentes, passim caducas, et aculeos coalitis, v. squamis peltatis, e verrucula oriundis, undique obsitæ; rhizoniis ⊣ — crassis, perennib. ⊰, terrestrib. v. aëreis. *Caudex* minimus v. elongatus, simpl. v. ramosus, terrestris v. epigeus, repens, scandens, carnosus, lignosus v. columnaris, erect. brevis v. ad 8 orgyas elatus, acrobryus et acrophyllus, quandoque rhizoniis et phyllopodiis obvallatus, cylindro ligneo, vaginas lignosas plures vasorum scalariformium includente v. ad axin simplicem reducto, fasciculis ad folia et rhizonia secedentibus. *Folia* (frondes auct.) minima v. maxima (3-orgyalia), sparsa v. coronantia, integra, cordata, lobata, dichotoma, palmata, pedata, sæpius pinnatisecta et decomposita, rarius articulato-composita, subcarnosa v. sessilia, apicibus v. dichotomiis gemmifera, concoloria v. discoloria, membranac. pellucida v. coriacea, annua v. bi-perennia, novella circinatim involuto-convoluta, raro stricta. Petiolus (stipes) fasciculo vasor. 1 ad 70 præditus, basi sæpe articularis, teres, semiteres v. canaliculatus, in lamina continuatus, rachin sibi conformem, simplicem (costam) v. decompositam et rachillas pinnarum, pinnular. et segmentorum, in pagina folii infera, rarius utraque prominulas v. intrarias efficit, in venas graciles, pellucidas, venulasque simpl., pinnatas, furcatas v. flabellatas diramificandas, ni, rachi crassiori evanida, mox in venas venulasque dissipetur. Stomatia sæpius dorsalia, rarius nulla. *Antheridia* vix ulla: bursiculæ sporangiis intermixtæ, illis Hydropteridum subanalogæ (?). *Sporangia* (capsulæ) hypophylla, raro et epiphylla, minuta, lenticularia, turbinata v. subglobosa, sæpius *annulo*, e catenula unica cellularum (10-40) formato, verticali, obliquo v. transversali, ⊣ — completo v. obsoleto, cincta, ruptilia, ri-

mosa, rarius acropora, plerumque in soros orbiculares, globosos, oblongos v. lineares et longissimos conferta, raro pauca v. solitaria. *Sori* e rachi, venis venulisve foliorum, passim in receptacula punctiformia v. majora-globosa, elongata v. longissima tumentibus, imposita v. ad rachin solam residuam, passim alatam spicati, nudi, pilosi v. indusio supero, infero v. laterali, scarioso, raro coriaceo, deciduo v. durabili, vero v. spurio, tecti v. involucrati. *Sporæ* copiosae, forma variae, episporio figurato ≺, ruptili v. trifido, et endosporio, globulis minorib. hyalinis et majorib. oleosis (guttulis) pleno, germinantes in proëmbryon foliaceum, radicans, bilobum, speciem suam e tuberculo evolvens, evanidum ≺ extendendae.

Præmissa tali ordinis descriptione, familiæ Filicum 8 (v. 10, Filicibus protogeæ haud inclusis) paucis adumbrandæ erunt.

Subordo I. Exannulatae: *Sporangia* exannulata v. annulo rudimentario, incompleto ≺:

FAM. 21. BOTRYCHIACEÆ *nob.*

Filices pusillæ et majores, anomalæ; caudex parvus, prodens folia gemina, petiolis passim connatis, v. bi-tergemina, crassiuscula, dimorpha, nov. stricta: alterum sterile, integrum, reniforme, reticulato-venosum, v. palmati-pinnatifidum et decomposito-sectum, alterum fertile, ad rachin simplicem v. pinnatam reductum, sporangiis solidis, exannulatis, sessilib., bifidis, distichis, discretis v. connatis, onustum. Sporæ glob., ellipsoideæ v. subtrilobæ. (In vagina folior. Botrychii Lunariæ sæpe folia novella latent.):—*Phylloglossum?*, *Ophioglossum*, *Ophioderma*, *Helminthostachys*, *Botrychium.*

FAM. 22. OSMUNDACEÆ.

Caudex brevis, folia plura, pinnatifida v. bipinnatisecta ≺, raches et venæ teretes, utrinque prominulæ, segmenta foliac.

v. coriacea, raro basi articulata, inferiora, media v. superiora dorso fructifera, ⊣— contracta; sporangia subglobosa, brachypoda, laxe reticulata, seggregata, pauca v. omne dorsum segmenti occupantia; annulus rudimentar. dorsalis v. O? — sporæ ellipsoideæ? *Osmunda*, *Todea*.

FAM. 23. MARATTIACEÆ.

Filices exoticæ, majores: caudice brevi, passim crasso, placentiformi ac squamis magnis (protophyllis?) obvallato v. arboreo, 5-pedali? Folia articulato-pinnata v. bi-tripinnatifida, pedatisecta, rarius unijuga v. integra, pinnis elongatis, integerrim, v. serratis, venis densis, a basi furcatis ⋖. Sporangia poro verticali v. rimula introrsum hiantia, syncyclica v. biseriata et connata in soros quasi multiloculares (bivalves), circulares, oblongos v. lineares, sparsos, confertos v. totam dorsi superficiem obtegentes, nudos v. indusiatos. Sporæ ellipsoid., quibusdam echinulatae: — *Kaulfussia*, *Marattia*, *Angiopteris*, *Danæa*.

FAM. 24. PARKERIACEÆ.

Filices aquaticae, annuae, exoticae, foliis sinuato-et decomposite-pinnatifidis, sinubus gemmascentibus, venis crassis, remote anastomosantibus; folia fructifera contracta, dichotoma, laxa, revoluto-cava. Sporangia tenerrima subglobosa, grossa, subannulata, e venis duabus longitudinalib. rachi parallelis undique oriunda, sessilia v. brachypoda. Sporae trigono-globosae, trifariam arcuato-striatae. Species paucae, vita aquatica et textura distinctissimae, Pteridi, Allosoro praesertim affines: — *Parkeria* (*Ceratopteris*) — an genera 2?

Subordo II. ANNULATAE: annuli subcompleti situ vario.

FAM. 25. POLYPODIACEÆ. (*Cathetogyratae* Bernh.).

Caudex varius, raro arborescens. Folia integra, lobata, v. 1-4-pinnatisecta, sterilia et fertilia passim dissimilia. Sporangia

lata ⊲, lenticularia, glob. v. obovata, sub annuli verticalis fere circularis apice lateraliter et transverse ruptilia. Sori hypophylli, raro et epiphylli, rotundi, oblongi, lineares v. amorphi, dorso v. apicibus venarum insidentes. Indusium superum, inferum, laterale, cupulare v. O. Sporæ variae. Familia vastissima, per omnem terrarum orbem sparsa, divisiones plures imperans.

A. *Polypodiariæ* s. *Gymnosoreæ* nob. Sori nudi v. vix margine folii v. pilis connatis velati:

a. *Taenitideae*: sori nudi, in unum v. plures, marginales v. intramarginales confluentes: *Monogramma*, *Taenitis*, *Polytœnium*, *Notholaena*, *Pteropsis*...

b. *Acrostichecæ:* exoticæ; sori amorphi: sporangia per omne dorsum (raro et faciem) folii fertilis absque ordine diffusa: — *Polybotrya*, *Olfersia*, *Platycerium*, *Acrostichum*, *Poecilopteris*.....

c. *Grammitideae:* sori oblongi v. linear. intramarginales, discreti, dein saepe confluentes, rachi v. venis venulisve impositi: — *Antrophyum*, *Hemionitis*, *Gymnogramme*, *Ceterach*; — *Grammitis*, *Stegnogramma*, *Meniscium*, *Synamnia*, *Seliguea*....

d. *Polypodieae:* sori discreti orbiculares, raro ovales, quibusdam papillis insidentes, squamulis interspersi v. velati et margine folii reflexo: — *Polypodium*, *Woodsia*? *Goniopteris*, *Marginaria*, *Campyloneurum*, *Pleopeltis*, *Phymatodes*, *Psygmium*, *Niphobolus*.... *Lecanopteris*, *Calymnodon*, *Jamesonia*; *Struthiopteris*.

B. *Aspleniariæ* s. *Cryptosoreæ nob.*: sori indusio veroo v. margine folii replicato velati:

e. *Pterideae:* sori seriati, in unum marginalem v. costalem confluentes v. interrupti, et tunc semper rachi v. margini folii v. segmenti paralleli, linear. v. lunulati: — *Pteris*, *Allosorus*, *Notochlaena*, *Cheilanthes*, *Cassebeera*, *Adiantum*, *Lonchitis*; — *Lomaria*, *Blechnum*; *Doodia*, *Woodwardia*...

f. *Asplenieae*: sori lineares v. lunulati, discreti, rachi v. margini obliqui (in segm. angustis parralleli), indusium laterale: — *Asplenium* (*Athyrium*), *Allantodia; Scolopendrium, Camptosorus; Diplazium*.....

g. *Aspidieae:* sori orbiculares et discreti ⊰; indusium orbiculare-peltatum, reniforme v. ellipticum: — *Didymochlaena; Aspidium, Sagenia, Polystichum; Nephrodium, Oleandra, Lastraea; — Hypodematium, Cystopteris; Onoclea*.....

h. *Dicksonieae:* sori discreti raro confluentes, indusio concavo, bivalvi v. cupulari et acrochizo, quibusdam pedicellato cincti; receptacul. punctiforme v. obsoletum: — *Lindsaya, Davallia; Dicksonia, Balantium, Cibotium; — Peranema, Physematium* (*Diacalpe, Hymenocystis*), *Thyrsopteris* (*Dicksonieis et Cyatheeis intermediae*).

FAM. 26. CYATHEACEÆ (HELICOGYRATÆ Presl.).

Filices tropicæ et hemisphærii australis ⊰, passim aculeatæ, caudice repente v. erecto, brevi v. ad 50 pedes elato, arboreo, tesselato, foliis pinnatisectis ⊰. Sori globosi, ⊣ — depressi, oligo-polycarpi, nudi v. indusiati; sporangia sessil. v. brachypoda, annulo subcompleto, lato, obliquo v. transverso, longitrorsum ⊰ dehiscentia; sporæ oblongæ, renif. v. triquetræ. (Sectio prima foliis c. Aspidieis convenit, secunda anomala, an familiæ distinctæ?)

A. *Cyathearіæ:* caudice erecto, sæpius excelso et arboreo, foliis amplis, pinnatifido-decompositis, herbaceis, rarius subintegris, sinuatis v. coriaceis. Sori globosi, in dorso venarum, sæpius prominularum, sessiles, in segmentis pauci v. bi-pluriseriati, raro solitarii, sæpius polycarpi, receptaculo glob. clavato, conico v. obsoleto, indusio infero, superne ruptili, quibusd. dimidiato, nullo v. in pilos resoluto; annulo obliquo; sporæ trigonæ ⊰: — *Matonia? Alsophila, Cyathea, Hemitelia, Trichopteris, Metaxya*.....

B. *Gleicheniariæ*: caudice repente et petiolis fasciculo vasor. centrali unico præditis; folia coriacea ≺, simpliciter v. sæpius di-trichotomo-pinnata et in furcis gemmifera, segmentis passim discolorib., margine revolutis v. cucullatis, venis pinnatis, intrariis v. prominulis et reticulatis. Sori in segmentis solitarii v. plures, in dorso v. apice venæ sessiles et immersi, toti decidui, 1-4-6-carpi, raro polycarpi; indusium verum et receptaculum vix ulla. Sporangia grossiuscula, obovata, sessilia, endoschiza, annulo lato oblique-transverso, sporis ellipsoid. v. trilobis: — *Stichcrus*, *Mertensia*, *Gleichenia*, *Calymella*, *Platyzoma*.

FAM. 27. HYMENOPHYLLACEÆ.

Filices elegantes, exot. ≺ partim minimæ et tenerrimæ — v. majores, caudice repente, gracili, ramoso v. brevi. Folia hygroscopica, absque stomatiis, integra v. varie divisa, sparsa v. conferta; passim badia v. sessilia; petiolus ater v. fuscus, sæpe nitidus, fascic. vasor. unico præditus, in rachin laminæ pinnatam v. venas palmatas, utrinque prominulas, rarius reticulatas continuatus. Sori marginales v. submarg., intra indusium firmum, campanulat. v. bivalve. Sporangia lenticularia v. turbinata, minuta transverse annulata, ad columellam, e nervo folii exserto et incrassato oriundam, brevem v. elongatam, inferne v. superne nudam, spiraliter spicata; sporæ globoso-trigonæ: — *Feea*, *Hymenostachys*, *Lecanium*, *Trichomanes*, *Microgonium*..... *Didymoglossum*, *Hemiphlebium.*; — *Ptychophyllum*, *Hymenophyllum*, *Sphaerocionium*.... (Gen. 19 in Monographia Cl. Presl. 1845).

FAM. 28. SCHIZÆACEÆ (ACROGYRATÆ Bernh.).

Filices tropicæ et hemisph. australis, exiles v. majores, caudice repente, brevi v. obsoleto. Folia integra, angusta, subtriquetra, dichotoma v. lata flabellata, pinnatifida v. pinnatisecto-decomposita (in Lygodio volubilia et triorgyalia), fasci-

culo spiriductuum unico v. in caudice pluribus. Sporangia sessilia, globosa v. oviformia, longitrorsum dehisc., annulo completo operculari, radiato, ad segmenta folii contracta, sæpius pinnata, v. dentes spicata di-tetrasticha, rarius ad marginem segmentor. latorum uniseriata, nuda, pilis stipata v. denticulis imbricatis alteratis singula (spiculæ Lygodii) v. margine revoluto indusiata. Sporæ tetraëdro-sphæricæ v. conicæ, passim echinulatæ: — *Mohria*, *Aneimia*, *Schizaea*, *Lygodium*.

## *Ordo IV. Equiseta.*

Caules articulati, herbacei, rigidi, vaginulati (foliis connatis verticillatis?), cortice lacunoso, medulla evanida ≺, tubulo ligneo c. spiriductibus, ramis verticillatis ≺, strobili sporophori terminales. — Calamiteis fossilibus, Casuarinis aliisque Strobilanthis quodammodo affines.

### FAM. 29. EQUISETACEÆ.

Caules teretes, articulati, simpl. v. ramosi, steriles. v. fertiles: articuli tubulosi ≺ clausi sulcati, cortice lacunoso, apice vaginiferi, vaginis 10-18-fidis (folia epiladia connata?), sulcis articulorum contiguorum alternantibus; fasciculi lignei contigui, lacunis interjecti, spiriductibus veris et annularibus ac prosenchymate provisi, hinc vaginam, illinc articulum superpositum intrant; epidermis firma viridis stomatiis seriatis ≺ et silicia scatet. *Rami* ad basin vaginarum extraxillares, verticillati v. depauperati, cauli consimiles, sed solidi, ut et *caudex* terrestris v. limnobius, perennis repens, fibrillis verticillatis et ramis passim tuberosis. *Strobili sporophori?* terminales (et ramorum), iis Cupressi v. Zamiæ subsimiles, receptaculis peltatis, axi continuis, 4-7-gonis: *sporangia* sena, rarius 7-4, cuique receptaculo subdita, introrsum fissa, sporis subglobosis fœta: quælibet spora filis duobus decussato-suppositis, elasticis, utrinque clavatis, granuliferis circumvoluta

(ovulum nudum = Conifer. et Casuarinæ, et staminodia 4 (?) Ad. Brongniart). E spora germinante proëmbryon pulvinatum prodit, caules Equiseti demum evolvens: *Equisetum*, (Oncyloglossum?)

*Appendix.* Genera plurima, nonnisi fossilia, passim gigantea, ad Protophyta referuntur: *Sphenophyllum,* (Marsileaceis affine), *Stigmaria* (Isoëtac.); genera 42 Filicum fossilium: *Pachy- Spheno- Cyclo- Neuro- Peco- Lonchopteris* etc. — *Bockschia, Glockeria, Gleichenites, Asterocarpus* etc. — *Hymenophyllites, Steffensia* etc. — *Beinertia, Asplenites, Cyatheites, Aspidites* etc. — *Caulopterides* et *Sigillaria; Psaronius* (Lycopod. et Filic. intermed.); *Calamiteae* arboreæ ≺ (Equisetac. aff.); — *Lycopodites*, et *Selaginites*; his proximæ censentur *Lepidodendreæ: Lepidodendron, Bothrodendron, Lepidophyllum, Ulodendron, Megaphyton, Halonia, Lepidostrobus* et *Cardiocarpus*, — an Zamiaceis affiniores?

Pteridophyta igitur, una c. Strobilanthis, Palmis aliisque Coccospermis, nec non Protophytis (exiguis), *Floram protogeæ* distinctam, in variis terrae stratis occultantem, eminenter constituunt. Accedunt Algae, Polyparii variaque Animalia petrefacta.

### Circulus II. PSEUDOSPERMAE.

Vegetabilia fungosa, squamosa, parasita, semin. aëmbryis ≺ v. arborescentia — ovulis immediate foecundandis. Spiriductus parcissimi v. in prosenchyma (Meyen) transfigurandi.

## Classis III. Rhizanthae.

Parasita fungosa non viridescentia, squamosa, tannino praegnantia, fasciculis vasorum striatorum sparsis et parcis, caudice contracto v. ramoso, scapigero v. excapo, floribus nudis v. perigoniatis, seminibus aëmbryis; Rafflesiae embryo amorphus (R. Brown).

Plantae singulares, partim a Forstero, Richard, Blume, Martius, Schott, Endlicher, Unger, Junghuhn, R. Brown aliisque examinatae, histologice nondum omnes rite cognitae. Cl. Göppert (*üb. d. Bau der Balanophoren....*1841) in caudice Balanophorarum (adinstar gallæ, e radice aliena, forsan a semine aëmbryo irritatâ, oriundo?) cellulosam copiosam, cytoblastis, cera et carbonate potassæ? abundantem, et fasciculos vasorum punctat. et striatorum sparsos, communes (plantæ generatrici et parasito) et proprios, ad organa florifera tendentes, describit, e structura varior. organorum Balanophoræ affinitatem partialem c. Filicib., Fungis, Cycad, Coniferis, nec non c. Artocarpo et Aroideis derivans.

Ordines et Familiæ 4; genera 15? species paucæ.

FAM. 30. LOPHOPHYTACEÆ. *nob.*

Scapi polycephali, flores mon-dioeci, bracteis monandris, solitariis v. ternis; ovaria nuda, 1-2-locularia, ovulis solitariis; fructus monospermi. *Sarcophyte; Lophophytum, Ombrophytum.*

FAM. 31. CYNOMORIACEÆ *nob.*

Scapi monocephali, flores bracteati, diclini, perigonio tubuloso, v nullo, androeceo monandro v. symphysandro, antheris extrorsis, 1-3-4-34; ovario 1-2-loculari, ovulis solitariis, fructu monospermo? *Cynomorium, Mystropetalum, Balanophora, Archimedea*; — *Cynopsole, Scybalium, Helosis, Langsdorfia.*

FAM. 32. CYTINACEÆ.

Scapi squamosi, florib. diclinis, bracteatis, — v. flos solitarius, sessilis, monoclinus, perigonio adnato, 3-4-6-lobo; stamina totidem v. dupla, +— connata, extrorsa; ovarium unilocul. placentis parietalib. multis, multiovulatis; amalthæa baccata mollis v. corticata, polysperma: *Cytinus*; *Hydnora*

FAM. 33. RAFFLESIACEÆ.

Flos solitarius, parvus v. maximus, bracteatus, utplurimum monoclinus et gynander, perigonio adnato, intus calloso. Antheræ plures, 1-2-∞-loculares, sub disco gynostemii. Ovarium uniloculare, placentis parietal, multis, multiovulatis. Amalthæa baccata cortice durissimo, semin. ∞, in pulpa nidulantibus, testa ossea; embryo amorphus v. 0? *Frostia*, *Mycetanthe*, *Rafflesia*.

## Classis IV. Strobilanthae.

Omnes arborescentes et diclinæ, resinosæ v. amylaceæ et gummiferæ, prosenchymate poroso peculiari, spiriductibus obsoletis v. parcis, ovulis immediate fœcundandis, plerumque atropis; embryo 2-15-cotyledoneus, pluribus abortivis, Casuarinæ exalbuminosus.

Classis arbores plures, vita longæva et statura grandi eminentes, zonas frigidiores præamantes, arborum protogeæ (succinifluarum?) quasi successores colligens, ligni, trunci, foliorum et organorum fructificationis qualitatibus singularibus a reliquis plantis distinctissimas. Ordines 4, familiæ 7, genera 30? species 280? ad quarum naturam dilucidandam auctores præcipue contribuere sequentes:

Rob. Brown, Appendix to voyage of King, 1825. On the plurality development of Embryos, in the seeds of Coniferæ, 1835.

Mirbel et Spach, Notes sur l'embryogénie des Pinus, — Thuya et du Taxus, 1843.

L. C. et A. Richard, Commentatio botanica de Coniferis et Cycadeis, 1826.

Zuccarini, Beiträge zur Morphologie der Coniferen.

Göppert, Betracht. üb. d. sogenannte Ueberwallen d. Tannenstammes. — Bemerkungen über den Bau d. Casuarina, in Linnæa, 1841.

F. A. G. Miquel, Monographia Cycadearum, 1842. Genera et spec. Cycadear. viventium — et über den Bau eines erwachsenen Stammes v. Cycas circinalis in Linnæa, 1843-4. Observationes de ovulo et embryonibus Cycadear., 1845.

C. A. Meyer, Versuch einer Monographie d. Gatt. Ephedra, 1846.

Ad. Brongniart, Prodrome d'une histoire de végetaux fossiles, 1828. — Observations sur la structure inter. du Sigillaria elegans etc. 1839 — aliique Paleontologi.

## *Ordo I. Pinopalmae.*

Strobilanthæ palmiformes, amylaceæ et gummiferæ.

### FAM. 34. ZAMIACEÆ s. CYCADEÆ.

Tropicæ ≺, *caudice* arborescente v. contracto-bulbiformi, acrobryo et peripherice continuo incrassando, rhizomate albicante vix ramoso, rhizoniis passim tuberosis. Fasciculi lignei e tubulis prosenchymaticis, porosis v. poroso-reticulatis (vasa) constantes, radiis medullaribus +— crassis disjuncti v. in cylindrum simplicem v. polystromaticum conferti; medulla amylacea ampla, raro fibrifera; cortex crassus parenchymaticus (medullæ subsimilis et gummifer) funiculis ligneis, a foliis descendentibus varie pertextus et strato interno distincto (libro?) auctus; periderma e bassibus foliorum et perularum. *Folia* (frondes) coronantia, perulata, annua v. biennia, pinnatisecta, rachi et segmentis novellis passim tomentosis et circinatis v. imbricatis. *Flores* dioeci, nudi, terminales: *Stamina* maxima, monadelpha, novella conferruminata in strobilum, lente increscentem, tandem dehiscentem, quibusdam bipedalem; antheræ grossæ, connexivo squamiformi v. peltato, subtus loculis numerosissimis, seggregatis v. per paria, tria aut 4 aggregatis, bifidis et passim in areas binas collectis, onusto; pollinia ellipsoidea, fasciata, hyalina. *Ovaria* phylloidea (car-

pophylla aperta) spicata, lobata, pinnata v. peltata, ovulis grossis, sinubus, stipiti v. peltæ carpophylli innatis, atropis, exostomio tubuloso pervio. *Syncarpium* strobilaceum, carpiis imbricatis v. peltatis; testa seminis drupacea et arillo cupulæformi quibusdam instructa; albumen carnoso-corneum cavis pluribus (resiniferis ≺), quorum centrale embryonem fovet, radiculâ funiculo longissimo, sub-spirali, ramoso (embryones abortivi) prædita, cotyledonibus 2 inæqualibus, carnosis, subconnatis et plumula inclusa. — Species 45? genera 4, totidem partibus orbis terraquei propria: *Cycas* — Asiæ et Nov. Holl.; *Macrozamia* — Nov. Holl., *Encephalartos* — Africæ, *Zamia* — Americæ. (Europa nonnisi fossiles condit species).

*Nota.* Zamiaceæ (Cicadeæ s. Cicadidæ-insecta) habitu Filices v. Palmas partim æmulantur, ex apice caudicis frondes pinnatas, confertas, ramis subverticillatis distichophyllis Dammaræ, Taxi et Taxodii subanalogas, ac androeceum v. gynoeceum nudum, terminale, solitarium, maximum (conus e spadicibus compositus? Miquel) evolvunt. Androeceum *Cycadis revolutae* quasi conum Pini Pineae polliniferum sistit; eadem ratione androeceum *Macrozamiae* — Abieti, et *Zamiae* c. cono Cupressi comparabitur. *Zamia* fructu Cupressum et Equisetum simulat; loculi antherarum in Cycadeis numerosissimi, e cellulis connexivi emersis et robustis formati, analoga sua in antheris 5-20-locellatis Juniperi et Araucariæ invenient. Ovula grossa, invita naturâ, a Miquelio aliisque ovaria dicuntur — et semina magna, sub aëris accessu libero maturescentia, fructus drupaceos mentiuntur.

## *Ordo II. Acerosae.*

Arbores excelsæ, resinosæ, v. frutices ramosissimi, phyllodiis acicularibus utplurimum, oppositis, verticillatis, sparsis, imbricatis v. fasciculatis et vaginatis, florib. nudis, antheris 2-20-locularibus, ovariis fertilibus ternis v. plurimis, 1-2-∞-ovulatis; strobilus raro baccatus; cotyledones 2-15..

### FAM. 35. PINEACEÆ s. Abietinæ.

Arbores v. frutices, ramis verticillatis ≺, foliis 3-7-enniis, raro annuis, plerumque perulatis, acicularib. rigidis ≺, sparsis, fasciculatis v. imbricatis et minutis, rarius majorib. ellipticis.

*Flores* mon-dioeci, amentacei: *androeceum* nudum, monadelphum, simplex v. compositum (sæpe perulatum et demum in ramum foliiferum excrescens), antherarum connexivo, loculos 2 appositos, longitrorsum dehiscentes, rarius 3-8-20, gerente, polliniis globosis. *Gynophorum* sæpe bracteatum, ovariis spicatis, planis (squamis), passim sub apice mucronatis (rudiment. styli?), ovula 2 atropa, collateralia, inversa, loculis inclusa, præter micropylen, v. libera, rarius 1-3-7, gerentibus. *Strobilus* e carpellis coriaceis v. lignescentibus et clavato-subpeltatis, 2-1-3-7-spermis, rarius deciduis; bracteis obsoletis v. accrescentibus. Seminum testa coriacea v. lignosa, sæpe alata (ala 1-2-laterali, e carpelli tunica faciali orta et solubili v. propria), albumine carnoso-oleoso, embryone axili, subæquilongo, radicula infera cylindrica, basi albuminis innata; cotyledones 3-15-2. (Species 115?): — *Pinus, Abies, Larix, Cedrus, Araucaria;* — *Dammara, Sciadopitys, Cunninghamia (Arthrotaxis).*

FAM. 36. CUPRESSACEÆ *s. Juniperaceae.*

Arbores v. frutices, foliis oppositis, verticillatis v. sparsis, sæpe imbricatis et minutis, perennibus, raro annuis v. perulatis. *Flores* mon-dioeci, nudi: androeceum monadelphum, antheris subpeltatis, brachynemis, loculis 4-5-2-12, margini inferiori connexivi appensis, polliniis globosis. Gynophorum, raro bracteatum, ovariis planis v. peltatis, 4 v. pluribus, decussatis v. sparse spicatis et pluribus sterilibus, ovulis atropis, lageniformib., erectis, 2-∞, rarius solitariis — ad basin carpophyllorum. Strobilus oligocarpus, carpellis sessilib. v. peltatis, coriaceis, lignosis, rarius baccatis, 1-∞-spermis, post fæcundationem concrescentibus et demum secedentibus ≺. Seminum testa membranacea v. lignosa, quibusdam alata, albumen carnosum, embryo axilis, subæquilongus, radicula Pineacearum, sed supera, cotyledones 2, raro 6-9. (Spec. 62?): —

*Juniperus, Thuja, Cryptomeria, Thujopsis, Cupressus, Callitris, Widdringhtonia, Taxodium, Chamæpeuce.*

## *Ordo III. Drupiferæ.*

Arb. v. frut., phyllodiis passim dilatatis, florib. nudis, dioecis ≺, antheris 2-8-locularibus; gynœceum ovulo unico, atropo v. anatropo; fructus 1-spermus, subdrupaceus; cotyledones 2.

### FAM. 37. TAXACEÆ.

Arbores v. frutices foliis sparsis, distichis, rarius imbricatis, decussatis et minutis, quibusdam dilatatis rhomboideis, crenatis v. bifidis. Flores dioeci, rarius monoeci: androecea axillaria v. terminalia, monadelpha, subspicata et involucrata, connexivo ovato v. peltato, loculos 2-5-8 inferos v. peltæ subdatos gerente. Gynoeceum solitarium, ovulo 1 atropo, erecto, lageniformi, cupulæ carnosæ (arillo v. ovario pervio?) ⊣— immerso, passim ovariis abortivis, raro fertilibus, v. bracteis (squamis imbricatis) involucratum. Bacca clausa v. apice pervia, semine nuciformi (drupa spuria), erecto, albumine subfarinaceo, embryone breviori dicotyledoneo, radicula supera. (Spec. 14?): — *Taxus, Torreya, Cephalotaxus, Dacrydium, Phyllocladus, Salisburia.*

### FAM. 38. PODOCARPACEÆ. *nob.*

Arbores ramis continuis, foliis sparsis, integerrimis, perennibus, oblongis v. minutis et decussatis. *Flores* dioeci: androecea spicata, terminalia, passim aggregata, antheris reniformibus, bilocular., perischizis; gynoecea carnosa, axillaria, solitaria, subtriloba v. squamulosa (carpophylla abortiva?), ovulo 1 anatropo, exserto, raphe lata, chalaza apicali, rostellata (styliformi). Fructus carnosus v. coriaceus, semine drupaceo exserto, albumine farinaceo, embryone dicotyli, radicula infera. (Species 24?): — *Podocarpus (Nageja).*

## *Ordo IV. Articulatae.*

Arb. — frut., ramis articulatis, foliis plerumque abortivis; perigonii rudimentum, antheræ biloculares, ovula 1-2, atropa v. anatropa, strobilus 1-2-∞-spermus, albumen carnosum v. nullum.

### FAM. 39. GNETACEÆ.

Frutices—arbores, ramis oppositis v. fasciculatis, articulatis, foliis oppositis, ellipticis v. abortivis. Flores mon- dioeci, amentacei: stamina solitaria v. monadelpha, antheris bilocularib. acroschizis, perigonio bifido et bracteato. Ovarium apice pervium, uniovulatum, solitar. — vaginulatum, v. duplex et carpophyllis sterilibus decussatis 2-6 involucratum; ovula atropa, erecta, micropyle styliformi, pervia, longe exserta (tubillus). Bacca monosperma v. strobilus, passim baccatus, 1-2-spermus: testa membran. v. coriacea, albumen carnosum, embryo longus v. brevis, bifidus, radicula supera: — *Gnetum*, *Ephedra* (spec. 21).

### FAM. 40. CASUARINACEÆ.

Arbores v. frutices equisetiformes, ramis ramulisque subverticillatis, articulatis, vaginulatis, aphyllis; lignum septis medullaribus radiantibus et concentricis interceptum, cortice crasso. *Flores* mon-dioeci: ♂ intra vaginas ramulorum verticillato-spicati, monandri; quilibet bracteolis tribus, calyptra bifida et anthera incumbente, biloculari; ♀ capitati: quilibet bracteola, ovario bivalvi, primitus hiante, tunc clauso, demum aperto, ovulo 1 inverso et anatropo ac stigmatibus 2 elongatis, ovulo adhærentibus. Strobilus e carpellis ∞ rigidis, demum bifidis, monospermis; semen caducum, compressum, ovatum, acropterum, inter testam et tegmen fibrillosum, exalbuminosum; cotyledones 2 ovatæ, planæ, radicula brevissima supera: — *Casuarina*.

*Nota.* Organa fructificationis peculiaria Strobilantharum, ab auctoribus vario modo interpretata, in plurimis denuo investiganda. *Podocarpi* ovulis anatropis a Taxaceis differunt; quinam modus fœcundationis ovuli hujus anatropi? in vivis speciebus Podocarpi, in hortis europæis vix florentibus, observandum.

Strobilanthæ fossiles: *Zamiostrobus*, *Palæozamia*, *Zamites*, *Pterophyllum*, *Nilsonia*, *Cycadites*, *Mantellia.*

*Pitys*, *Elate* Endl., *Palæocedrus* Ung., *Cunninghamites* et *Araucarites* Sternb., *Voltzia* Brongn., *Haldingera* Endl., *Damarites* Sternb., *Strobilites* Schimp. et Moug., *Pissadendron*?, *Pinites* et *Peuce* With.

*Juniperites* et *Cupressites* Brongn. *Thuyites* et *Steinhauera* Sternb., *Taxodites* et *Thyoxylum* Ung.

*Taxites* Brongn., *Taxoxylum* Ung. — *Brachyphyllum* Brongn. — *Casuarinites* Göpp. etc.

Circulus III. COCCOSPERMAE (Monocotyledones, Chlamydoblastæ et Dicotyled. spuriæ).

Caulis, caudex v. scapus præsertim evoluti, rhizomate suppresso; spiriductus (quibusdam obsoleti) in fasciculis ligneis sparsis, exterioribus rarius in tubos connatis; cortex et canalis medullaris vix distincti. Folia plerumque vaginantia, simplicia (v. phyllodia), alterna, recti-clathri- sigmoideo-nervia v. costulata, raro reticulato-venosa et partita. Organorum floralium numerus plerumque ternarius. Embryo sæpissime albuminosus, cotyledone unica, rarius altera minima v. æquali et sacco amniotico inclusus.

## Classis V. Calamophyta.

Caulis sæpe prævalens et stolonifer, ni, illo suppresso, caudex v. folia magis evolvantur (*Antithesis* Reichenbachii?). Flores sæpius spathacei v. glumacei, perigonio nullo, rudimentario, raro conspicuo; fructus plerumque monospermi.

## *Ordo I. Potamophila* nob.

Calamophyta aquatica, partim minuta et anomala, polymorpha (= Proteaceis), partim graminea; embryo exalbuminosus, quibusdam di-tetracotylis.

### FAM. 41. LEMNACEÆ.

Plantulæ acaules, aquaticæ, radicellis calyptratis v. arrhizæ, spiriductibus + — evolutis. Flores mono-diclini e fissura marginali v. pagina frondiculæ, spatha tenerrima, mondiandri, anthera biloculari, transversim dehiscente; ovarium uniloculare, ovulis 1-7, erectis v. horizontalib., ana-amphi- v. orthotropis. Capsula indehiscens, mono-plejosperma, embryo exalbuminosus: *Wolfia*, *Lemna*, *Telmathophace*, *Spirodela*.

### FAM. 42. PODOSTEMACEÆ.

Hbæ submersæ, exoticæ, Muscos, Hepaticas, imo Fucos e p. simulantes, spiriductibus destitutæ, radiculis minimis adfixæ, *phyllodiis* alternis, integr. v. lobatis et filif., astomis, cauli continuis. — *Flores.* mono-diclini, axill. v. term., solitar. v. aggreg. spicative, spathacei, sepalis 0 v. 2-3-pluribus, interdum unilateralibus; stam. 1, 2, ∞, hypogyna, interd. unilater. v. monadelpha et quædam ananthera, antheris normal. ⊀, dorsi- v. basifixis, ovatis v. oblongis. *Ovar.* 2-3-loc. v. septis incompletis unilocul., ovulis ∞ adscend., amphitropis, stylo indiviso v. 2-3-fido. — *Capsula* 2-3-locul. septifraga, valvis 2-3, placentam seminiferam nudantibus; semina minuta, imbricata, exalbum., embryone dicotyli, radic. brevi: — Genera 10. *Mniopsis*, *Sphœrothylax*, *Hydrobryum*, *Podostemon*, *Blandowia*, *Mourera*, *Lacis*, *Tristicha*; — *Hydrostachys* et *Halophila*?

### FAM. 43. CERATOPHYLLACEÆ.

Hbæ submersæ, spiriductib. destitutæ, caule ramisque teretib. articulatis, phyllodiis verticillatis, dichotomo-filiformib.,

subserratis, rigidulis. — *Flor.* monoeci, axillar., sessil., *involucro* multifido — et *antheris* 12-20 sessilib., oblongis, subcompressis, bilocul., apice 2-3-cuspidatis, parenchymatosis, tarde dehisc. (pollinia parca, ovata)—v. *ovario*, cui ovulum 1 pendul. (atrop.?) et stylus subulatus. — *Nucula* coriacea c. involucro persistente, apiculata et passim aculeis 2, supra basin tandem excrescentibus tricuspidata. Albumen O. Embryo viridis, cotyledon. 4 verticillatis, 2 alternis angustioribus, gemmula magna polyphylla et radicula brevi supera: — *Ceratophyllum.*

FAM. 44. RUPPIACEÆ. (*Najadeae* s. *Fluviales.*)

Hbæ submersæ, raro natantes, caule nodoso, phyllodiis v. foliis sparsis, rarius opposit. v. ternis, enerviis v. nervoso-costulatis, amplexicaulib., vaginantib., v. stipulis connatis axillarib. magnis præditis. — Flor. diclini, axillar. v. termin., solitarii v. congesti et spicati, monandri v. quasi monoclini, 2-4-andri et 4-6-gyni. Antheræ sessil. v. filamento suffultæ, 1-2-4-locul., quandoque spathæ ampullaceæ ruptili inclusæ v. bractea stipatæ; polliniis globosis v. confervoideis.

Ovaria solitaria v. 2, 4, 6 approximata et antheris circumdata, ovulo 1 erecto, desc. v. pendulo: stylo 1 v. O, stigm. 1-3. — *Utriculus* membranac. v. drupaceus, raro ruptilis, bivalvis v. baccatus; semen pendul. v. erectum; embryonis exa buminosi macropodi cotyledon recta, uncinata, accumbens v. extrorsum circinata, gemmula in rima laterali v. intraria.

a. *Zostereæ:* pollen confervoideum; styl. bifidus v. stigma sessile; semen pendul., v. parietale; cotyledon tenuis, flexuosa, e rima laterali radiculæ maximæ: — *Zostera, Cymodocea, Thalassia, Posidonia....*

b. *Najadeæ:* pollen globos.; styl. 2-3-partitus; semen erect, embr. rectus, (cotyled. brevi?). Folia terna v. opposita, enervia, repando-dentata: — *Caulinia, Najas.*

c. *Ruppieæ:* pollen 3-hilat. botelliforme; flores pseudo-hermaphrod.; stigma sessile, peltatum; drupulæ pedicellatæ; sem. pendul.; cotyledon radiculæ maximæ accumbens: — *Ruppia.*

d. *Potamogetoneæ:* pollen globos., flores pseudo-hermaphrod. stam. bracteata ≺, stigma simpl. v. peltatum; semen pendul. v. perietale; cotyledon uncinata, clausa vel circinato-revoluta, rimosa. Folia passim nervoso-costulata, altern. v. opposita: — *Zannichellia, Halodule, Althenia; Potamogeton.*

## *Ordo II. Glumiflorae.*

Caulis saltem ad basin nodosus; folia simplicissima, vaginantia, elongata ≺ v. abortiva; flores glumacei ≺, perigonio exili, ovulo solitario ≺; caryopsis, albumine plerumque farinaceo; ultimis capsula polysperma.

### FAM. 45. GRAMINACEAE.

Herbæ pusillæ v. altissimæ et arborescentes, passim cæspitosæ et stoloniferæ, culmo (caule) tereti v. compresso, nodoso, fistuloso, rarius farcto v. ramoso, nodis rarissime ad basin internodii summi restrictis. Folia e nodis alterna, vagina fissa (petiolus culmum amplexans), superne passim ligulifera, lamina angusta, raro ovata, multinervi, integerrima, margine sæpe scabra. *Flores* monoclini, rarius diclini v. polygami, in spiculas 1 - ∞ - floras, spicatas, racemosas v. paniculatas, rarius in spatha aggregatas, congesti. Cuilibet spiculæ glumæ (bracteæ steriles) sæpe geminæ, antica et postica, raro deficientes v. plures — et *glumellæ* (paleæ, Kunth), plerumque geminatim in axi flexuoso alternantes, ni par unicum sit; *glumella* interna s. postica sæpius binervis v. apice bifida, externa 1 - 3 - ∞ - nervis et sæpe aristata; huic opponuntur sepalidia carnosula, minima, bina (squamulæ, lodicula), c. staminibus hypogynis 3 alternantia; nonnullis stamina 6, ad ovarium verticillata v. ad 1 anticum v. 2 lateralia reducta,

raro indefinita, ovario abortiente, rarissime 4; paucis sepalidium tertium et glumellæ steriles plures adduntur; filamenta gracilia, raro basi connata; antheræ normales, lineares, dorsifixæ, longitrorsum v. sursum dehiscentes; pollinia subglobosa lævia. *Ovarium* liberum, styli 2, raro 3-1, stigmata longa pilosa, ovulum unicum, parieti ovarii postico per totam longitudinem affixum v. erectum, raro appensum, micropyle semper infera. *Caryopsis* libera v. cum glumellis connata, pericarpio tenui raro crustaceo, carpomphalo basilari passim in sulcum producto. Embryo minutus, basi albuminis farinacei antice applicitus, e cotyledone scutelliformi, rarius convoluta v. et altera minima præsente (epiblasto) et blastemate constans.

*A.* Aveninae: paniculatæ, spiculis 1-∞-floris, superne abortivis, sæpe aristatis:

a. *Agrosteæ:* spiculis uni-sesquifloris: — *Coleanthus*, *Agrostis*, *Apera*, *Gastridium*, *Cinna*, *Polypogon*, *Mühlenbergia*....

b. *Aveneæ:* spiculis 2-∞-floris, arista glumellæ tortili ≺: — *Corynephorus*, *Deschampsia*, *Aira*, *Lagurus*, *Anthoxanthum*, *Hierochloa*, *Trisetum*, *Avena*, *Arrhenatherum*, *Eriachne*, *Danthonia*....

c. *Stipeæ:* spiculæ unifloræ, arista torta, basi articulata, v. 3-fida: — *Oryzopsis*, *Lasiagrostis*. *Stipa*, *Aristida*...

d. *Phragmiteæ:* spiculæ 1-∞-floræ, glumellæ pilis stipatæ: — *Calamagrostis*, *Deyeuxia*, *Ammophila*, *Arundo*, *Phragmites*, *Gynerium*....

*B.* Panicinae: panicula, passim spicæformis, spiculæ 1-2-floræ, sæpius inferne abortivæ, glumellæ chartaceæ, rarius aristatæ.

a. *Paniceæ:* spiculæ sesquifloræ; muticæ ≺; glumæ 2-1-0: — *Reimaria*, *Paspalum*, *Milium*, *Piptatherum*, *Eriochloa*, *Panicum*, *Isachne*, *Stenotaphrum*, *Oplismenus*, *Echinochloa*, *Setaria*, *Pennisetum*, *Cenchrus*, *Lappago*, *Spinifex*....

b. *Phalarideæ:* spiculæ 1-2-floræ, hetero-homæoclinæ; glumæ æquales: — *Mibora*, *Crypsis*, *Alopecurus*, *Beckmannia*, *Phleum*, *Hilaria*, *Phalaris*, *Digraphis*, *Holcus*....

c. *Oryzeæ:* spiculæ unifloræ, fl. passim diclini et 6-andri: — *Leersia*, *Oryza*, *Potamophila*, *Zizania*, *Ehrharta*....

d. *Olyreæ*: mon-dioecæ, monostyles?: — *Lygeum*, *Luziola*, *Pharus*, *Sclerachne*, *Olyra*, *Zea*, *Coix*....

*C.* Saccharinae Rchb.: spicatæ v. paniculatæ; spiculæ 1-2-∞-floræ, partim abortivae, glumellæ herbac. v. hyalinæ:

a. *Pappophoreæ:* capitato-spicatæ v. paniculatæ, spiculæ 2-∞-floræ, sursum abortivæ; glumella ext. 3-∞-aristata: — *Echinaria*, *Cottæa*, *Pappophorum*, *Trirhaphis*, *Diplopogon*, *Amphipogon*....

b. *Chlorideæ:* spicæ digitatæ v. paniculatæ, spiculæ unilaterales 1-∞-floræ, sursum abortivæ: — *Cynodon*, *Dactyloctenium*, *Chloris*, *Eleusine*, *Ctenium*, *Spartina*, *Eutriana*....

c. *Andropogoneæ:* spiculæ 1-2-floræ, passim polygamæ et subtus piliferæ, glumellæ hyalinæ; saccharo v. resina et ætheroleo eminent: — *Ischæmum*, *Andropogon*, *(Sorghum) Apluda*, *Dieclomis*, *Anthistiria*, *Elionurus*, *Erianthus*, *Imperata*, *Saccharum*.

*D.* Festucinae: spicatæ v. paniculatæ, spiculæ sæpius multifloræ:

a. *Rottbölleæ:* spica articulata ≺, spiculæ 1-2-floræ immersæ, glumæ coriaceæ 1-2-0; stam. et styli passim numero imminuti: — *Nardus*, *Psilurus*, *Lepturus*, *Oropetium*, *Ophiurus*, *Rottbölla*, *Tripsacum*, *Manisuris*....

b. *Triticeæ:* spica articulata, spiculæ 3--∞ 1-floræ: *Lolium*, *Catapodium*, *Brachypodium*, *Agropyrum*, *Triticum*, *Secale*, *Elymus*, *Hordeum*, *Aegilops*...

c. *Festuceæ:* paniculatæ ≺, spiculæ multifloræ ≺: — *Colpodium*, *Triodia*, *Poa*, *Centotheca*, *Sclerochloa*, *Glyceria*, *Catabrosa* .. *Briza*, *Calotheca*, *Melica*, *Molinia*... *Sesleria*,

*Köleria, Schismus,... Cynosurus, Lamarkia, Dactylis, Chamædactylis.... Vulpia, Sphenopus, Festuca: Schedonorus, Bromus, Uniola...*

d. *Bambuseæ:* frutescent. et arborescentes, 3-6-andræ; spiculæ abortivo-oliganthæ, paniculatæ v. spicatæ, sepalidiis passim ternis: — *Arundinaria, Arthrostylidium, Streptogyna, Chusquea, Merostachys; — Guadua, Nastus, Schizostachyum, Bambusa, Streptochæta, Melocanna.*

FAM. 46. CYPERACEÆ.

Hbæ ann. v. perennes, plerumque cæspitosæ, caudice obsoleto v. repente, raro adsurgente, sæpius stoloni- v. tuberifero. Caules triquetri, teretes, ancipites, simplices, primo farcti dein lacunosi, raro multanguli v. ramosi, nodis plerumque ad basin caulis restrictis. *Folia* e nodis alterna, vagina integra eligulata, raro fissa v. in appendicem, laminæ oppositam producta, lamina angusta elongata, clathrinervia, plana, canaliculato-triquetra, compressa v. abortiva, raro lanceolata, margine passim scabro. *Flores* mono-diclini, glumacei, di-tri-tetra-polystichi, in spiculas 1-∞-floras, solitarias, glomeratas, spicatas v. paniculatas, bracteatas congesti: cuilibet flosculo gluma (bracteola, squama) solitaria, raro gemina, inferiores sæpe steriles; multis adduntur setæ hypogynæ (perigonium?) 3-6-10-∞, plerumque scabræ, quibusdam membranaceæ, cartilagineæ v. fimbriatæ et basi inter se v. cum disco præsente connatæ v. in glumellas parallelas v. contrarias 1-2-3-6, liberas v. connatas (perigynium) aut in utriculum effiguratæ. *Stamina* hypogyna 3, rarius 2 postica, v. unum anticum v. 6-9-12, filamentis marcescentibus, antheris basi fixis ≺ elongatis, normalib. v. perischizis, passim apiculatis, polliniis ellipticis unirimosis. *Ovarium* 1, liberum, ovulo 1 erecto, anatropo, stylo 2-3-fido, rarius integro, sæpe basi incrassato et articulato. *Nucula*, passim disco v. setis et filamentis stipata, mutica v. stylopodio rostrata, pericarpio chartaceo,

crustaceo v. osseo et scrobiculato v. striato; semen erect., testa tenera, albumine subfarinaceo, embryone basilari, incluso, minimo. Tribus 10 auctorum sic ad 4 reducuntur:

*A.* Cyperinae: spiculæ ∞-floræ ◁ 2∞--stichæ fl. monoclini ◁, glumæ inferæ sæpe steriles, nuculæ chartaceæ ◁, rarius rostratæ:

a. *Cypereæ:* glumæ distichæ, perigonium 0: — *Kyllinga, Mariscus, Pycreus, Cyperus. Diclidium, Papyrus....*

b. *Scirpeæ:* glumæ polystichæ et passim setæ hypogynæ:— *Abildgaardia, Ficinia, Fimbristylis, Trichelostylis, Isolepis, Androcoma.... Fuirena, Melancranis, Hemichlæna.... Eleocharis, Scirpus, Malacochæte, Eriophorum....*

c. *Hypolytreæ:* spiculæ polystichæ, glumellis 1-2-3-6, lib. v. connatis, fl. raro diclini: — *Hemicarpha, Platilepis, Lipocarpha, Hypolytrum, Diplasia.*

d. *Elyneæ:* spiculæ polystichæ, mono-diclinæ, glumellæ 0 v. 2-3, tertia utriculiformi, stylo adnata et nuculam induviante: — *Trilepis, Elyna, Kobresia.*

B. Caricinae: fl. monoeci (v. dioeci), spiculæ polystichæ ∞-floræ ◁, glumella utriculiformis, gynœceum includens cum fructu increscens et cum illo decidua: — *Vignea, Carex, Uncinia, Hoppea, Schœnoxyphium.*

*C.* Schoeninae: spiculæ 2-∞-stichæ, mono-diclinæ, sæpius pauciforæ, glomeratæ et partim abortivæ; setæ hypog. 6-8-10, 3 v. 0; nuculæ duriores, sæpe rostratæ: — *Chætospora, Rhynchospora, Haplostylis, Machærina.... Dichronema, Schœnus.... Cladium, Lamprocarya, Gahnia....*

*D.* Scleriinae: spiculæ diclinæ: ♂ pluriforæ, 1-3-5-andræ, ♀ uniforæ c. glum. abortivis; discus integer v. trilobus, passim c. setis hypogynis; nucula dura, globosa, lageniformis, basi in disco contracta: — *Chrysithrix.... Diplacrum, Acrocarpus, Cephalocarpus, Cryptangium, Lagenocarpus, Scleria, Macrolomia, Schizolepis, Becquerelia, Calyptrocarya....*

### FAM. 47. TYPHACEÆ.

Herbæ perennes, aquaticæ, caudice crasso repente, caule tereti farcto, phyllodiis distichis, alternis, demissioribus, gramineis, clathrinerviis et basi vaginantibus. Spicæ monœcæ in apice caulis (et ramorum) superpositæ, globosæ v. cylindricæ, phyllodio bracteali deciduo ≺ stipatæ, superiores ♂, inferiores ♀: flores minuti, numerosissimi, passim bracteati, perigonio 3-sepalo v. filamentoso. Stamina 3, lib. v. monadelpha, antheris basifixis, crassiusculis, bilocul., ex apice ad latera bifindendis; pollinia glob. v. ellipsoidea. Ovaria solitaria (raro bina connata), subsessilia v. tandem longe gynopodiata, monostyla, stigmate linguæformi, ovulo 1 pendulo, anatropo. *Caryopsis*, Sparganio drupacea, albumine carnoso-farinaceo; embryo axilis, subæquilongus, teres, rectus, c. rimula laterali et radicula supera crassiori. Genera 2, spec. 16? — *Typha; Sparganium.*

### FAM. 48. PANDANACEÆ.

Caudex passim arborescens, erectus et rhizoniis crassis suffultus v. debilis, decumb., abbreviat. et subnullus. Phyllodia confertim alterna, passim imbricata — v. folia pinnati- v. palmatifida, petiolo basi vaginante. *Spadices* thyrsoidei, spatha mono, plejophylla: flores mon-dioeci, v. androgyni, raro polygami, 3-6-polyandri, quibusd. perigoniati: filam. filiformia (Nipæ connata), antheris basifixis, 2-4-locul., perischizis (Nipae extrorsis), polliniis globosis. *Ovaria* 1-locul. nuda, raro perigonio libero adnato stipata; stigmata sessil. 1-4, v. stylosa; ovula solitar. v. plurima in placentis parietalibus 3-4 adscendentia, anatropa. Fructus grandis e drupis fibrosis v. baccis confertis, 1-∞-spermis v. ex ovariis plurib. connatis — ∞-locularis, v. unilocul., septis destructis. Semina albumine copioso, carnos. corneo v. osseo, embryone minuto.

a. *Pandaneæ veræ:* phyllodiatae, nudiflorae, gerontogeae: — *Vinsonia*, *Pandanus*, *Freycinetia.*

b. *Cyclantheæ:* flabelli — v. pinnatifrondes, passim perigoniatae, Americanae: — *Carludovica*, *Cyclanthus*, *Wettinia.*

His et Palmis intermediae:

c. *Phytelephantheæ:* caudex brev. v. elatus, foliis pinnatis coronantibus; spadices simplic. clavati, spatha monophylla: flor. densi, polygamo-dioeci, polyandri, perigonio ∞-dentato, stylo 5-6-fido; fructus magni, aggregati, muricati, 4-locul., 4-spermi; albumen osseum: — *Phytelephas.*

d. *Nipeæ:* caudex brevis foliis coronantib. pinnatis, pinnis lanceolat. aceroso-dentatis; spadix androgynus, ramosus, vage spathatus: fl. ♂ in ramis lateralibus minuti, densi, bracteolati, perigonio 6-mero, androecco columnari, antheris 6 extrorsis; ♀ terminales, capitati, nudi, ovario unilocul., 3-stigmeo, 3-ovulato?; syncarpium magnum, drupaceum?, semina solitaria ⊀, ossea, embryone basilari: *Nipa.*

*Nota.* Typhaceæ a Cyperaceis nonnisi embryone longiori essentialiter differunt. Conf. Sparganium c. Caricc stellulata — et Schnitzlein *Dissertat. botanica de Typhacearum famil. naturali.* 1845. Pandanaceæ, Aroideis vix affines, forsan c. Typhaceis jungendæ sunt, ut jam in systemate Reichenbachii peractum est.

### FAM. 49. PHILYDRACEÆ.

Hbæ paludosæ, exoticæ, caule erecto, fol. gramineis (Sparganii), alternis, basi vaginantibus, imis equitantibus. Flores spicati, quilibet gluma antica, glumellis corollinis 2 c. staminodiis (sepalidiis?) 2 alternis et stamine 1 antico, anthera 2-loculari; ovario 3-phyllo, monostylo, ovulis ∞ axilib. v. parietalibus, 1-2-seriatis, horiz., anatropis. Capsula 3-1-locularis, loculicida; semina ∞, subcylindrica, hilo excavato, chalaze tumida, embryone axili in albumine carnoso (spec. 2): — *Hetæria*, *Philydrum.*

## *Ordo III. Juncagines.*

Caulis varius; folia angusta, lata v. abortiva; perigonium sæpe dimorphum et corolla spectabilis; fructus plerumque capsularis; albumen ultimis nullum. — Quibusdam notis ad Palmas et Liriophyta tendunt.

### *A.* Albuminosae.

#### FAM. 50. JUNCACEÆ.

Hbæ annuæ v. caudice ⊣ — conspicuo perennantes, caulinæ v. scapigeræ, foliis linearibus v. teretibus, vaginantib. v. abortivis. *Flores* monoclini ☿, cymosi v. glomerati, regulares, sepalidiis et petalidiis glumaceis, raro petaloideis, persistentib., bracteolatis. Stamina 6 hypogyna v. basi perigonii adnata, raro 3, sepalidiis opposita. Ovarium triphyllum, tri- v. semitriloculare, ovulis 3 erectis v. ∞ ascendent., anatropis, stylo symmero v. trifido. *Capsula* 1-3-locularis, 3-valvis, loculicida, raro septifraga, 3-∞-sperma; albumen dense carnosum, embryone parvo, conico: — *Luzula*, *Prionium*, *Juncus*, *Narthecium*. — His affines sunt (?):

b. *Flagellarieæ* — fructu quarundam baccato v. drupaceo-monospermo: *Astelia*, *Hanguana*; *Rapatea*; *Flagellaria*.

c. *Xerotideæ* — ovulis amphitropis, capsula cartilaginea v. baccata, seminib. peltatis, albumine cartilagineo, embr. longiori: *Xerotes*, *Susum*.

d. *Kingieæ* — arborescentes v. frutescentes, utriculo monospermo, perigonio symmero, antheris biporosis ☿: — *Kingia*, *Dasypogon*; *Calectasia*.

#### FAM. 51. COMMELYNACEÆ. nob. (Enantioblastæ *Endl.*).

Hbæ annuæ v. caudice perrenni præditæ, scapigeræ, caulescentes v. suffruticosæ, foliis vaginantibus, imis, abortivis v. alternis, angustissimis v. latis et nervoso-costulatis, integerrimis. Flores mono-diclini, congesti, raro solitarii, bracteati et bracteolati, perigonio similari glumaceo v. dimorpho; sepalidia

1-2-3, petalidia v. petala, libera v. connata ac stamina petalina totidem, antheris 1-2-locularibus, passim c. staminodiis sepalinis. *Ovarium* lib., 3-2-1-phyllum, 1-3-loculare, synstylum, ovulis *atropis*, solitariis v. pluribus, pendul. v. erectis. *Capsula*, 1-3-locularis, loculis 1-∞-spermis: semina duriuscula, passim arillata, embryone parvo, lenticulari v. trochleari:

a. *Restieæ:* junciformes v. suffrutescentes, perigonio glumaceo, 1-2-3-andro, antheris passim unilocularibus, ovulis pendulis solitariis, capsula 1-3-sperma: — *Centrolepis, Gaimardia; Leptocarpus, Willdenowia, Thamnochortus, Elegia, Restio....*

b. *Eriocauloneæ:* junciformes, scapigeræ v. suffrutescentes, flor. capitatis minutis, diclinis, corolla ♂ synpetala, 3-6-andra v. c. staminodiis; ovulis solitar. pendulis, capsula loculicida 2-3-sperma, semin. pilosis: — *Eriocaulon, Tonina, Philodice....*

c. *Xyrideæ:* scapi simplices, monocephali, foliis ensi- v. filiformib., petalis unguiculatis, basi coalitis, antheris 3 extrorsis c. staminodiis antesepalinis; ovarium 3-phyllum, uni- v. subtriloculare, ovulis pluribus; capsula suturi-loculicida v. operculata: — *Xyris, Abolboda.*

d. *Commelyneæ:* foliis caulinis, passim latis, nervoso-costulatis; corolla subirregulari, 6-andra, antheris partim abortivis (1-5), ovario 3-1-loculari, ovulis ∞ v. geminis, erectis, collateral. v. superpositis; capsula 1-2-3-locularis, loculicida v. indehiscens, quibusdam bacato-induviata; embryo trochlearis: — *Mayaca; — Callisia, Aneilema, Commelyna, Tradescantia, Dichorisandra, Cartonema....*

*B.* Exalbuminosae — helobiæ. Ruppiaceas repetunt, quædam lactescentes, acres et Ranunculos æmulantes.

### Fam. 52. Alismaceæ.

Hbæ paludosæ, caudicatæ, scapigeræ, quaedam lactescentes, phyllodiis linearib. vaginantibus v. foliis nervoso-costulatis. *Flores* mono-diclini, cymoso-spicati v. paniculati: perigo-

nium 1-2-3-6-merum, hoc. v. similare dimorphum, petalis 3 deciduis, nov. imbric. v. involutis; stamina isomera v. multipla (in Alismate petalis geminatim opposita), antheris perischizis ⊲; ovaria brachystyla, 3-6-∞, verticillata v. capitata, ⊣— coalita, raro solitaria, ovulis 1-2, erectis v. superpositis, ana-campylotropis. Utriculi, folliculi dispermi v. capsula, seminib. rectis v. uncinatis, exalbuminosis; embr. rectus v. conduplicatus: — *Lilæa*, *Tetroncium*, *Triglochin*, *Scheuchzeria*; — *Cycnogeton*, *Aponogeton*, *Ouvirandra*; — *Alisma*, *Damasonium*, *Sagittaria*.

FAM. 53. BUTOMACEÆ.

Hbæ paludosæ caudicatæ scapo quibusd. lactescente, phyllodiis linearib. v. foliis nervoso-costulatis. *Flores* solitarii v. cymoso-umbellati, monoclini, perigonio liliaceo; stamina petalina terna (9) v. indifinita, antheris perischizis ⊲; ovaria brachystyla, 6-∞, verticillata, ⊣— coalita, ovulis ∞, campylotropis e placenta parietali reticulata. Syncyclium e folliculis panspermis; embryo exalbuminosus, rectus v. uncinatus: — *Butomus*, *Hydrocleis*, *Limnocharis*.

## *Ordo IV. Martiana s. Principes.*

Familia unica?, a Martio præsertim illustrata.

FAM. 54. PALMÆ.

Caudex acrobryus, excelsus v. contractus, extus durus, intus amylaceo-medullosus, quibusdam arundinac. et longissimus, foliis coronant. v. alternis, pinnatim v. palmatim divisis, segmentis disjunctis et basi callosis v. ⊣— connatis, nervosis, raro venosis novellis in ⩵ v. reduplicatis; petiolis basi vaginantibus. *Spadix* axillaris, simpl. v. ramosus, continuus v. articulatus, spatha et spathellis præditus, floribus abortivo-diclinis, rarius monoclinis, spadici immersis v. pedicellatis, passim tribracteatis: sepalidia 3, libera v. connata, passim glumacea; pe-

talidia 3 lib. v. coalita; stamina hypo- v. perigyna, libera v. monadelpha, 6, raro plura (20-60) v. 3, sepalidiis opposita; antheræ dorsifixæ, introrsæ. *Ovaria* 3, 2, 1-6, ⊣— — coalita, unico v. plurib. fertilibus, ovulis solitariis erectis, ortho-campylo-anatropis, raro geminis. Bacca v. drupa (rite distinguenda) 1-3-sperma; semen erectum v. lateraliter appensum, c. endocarpio ⊣— — connatum, albumine magno, duro, cavo passim centrali et embryone parvo, conico v. cylindrico, operculato, apicali, basilari v. dorsali. — C. F. Ph. a Martius splendidum Opus de Palmis consulentes. Palmas ad tribus 4 (familias?) sic disponere tentamus.

*A.* Lepidocaryinae Mart. s. *Calamaceæ.* Palmæ sæpius arundinaceæ, cæspitosæ, scand. et aculeatæ, caudice culmiformi, longissimo (ad orgyas 60 et ⊣—), remote-foliato, rarius normali — elato v. demisso, medulla plerumque rubente. *Folia* pinnata (paucis flabellata), pinnis angustis, reduplicatis, raro trapezoideis, rachi passim in cirrhum aculeatum producta. *Spadix* ramosus, ramis ramulisque articulatis, spathis et spathellis varii ordinis, lib. v. adnatis (*Ceratolobo* spatha solitaria completa et panicula bracteolata). *Flores* plerumque dioeci, in ramulis ultimis quasi amentacei, calyce campanulato, corolla 3-partita, androeceo monadelphio, corollæ adnato, antheris 6-12, ovario triloculari ⊲, ovulis erectis. *Bacca* squamis retrorsis tessclato-corticata, parce carnosa, 1-sperma, raro 2-3-sperma, albumen corn. æquabile v. ruminat.; embryo basilar. v. dorsalis.

*a. Calameæ* s. *Pinnatæ*, (spec. 66?): — *Ceratolobus, Demonorops, Plectocomiá, Zalacca, Calamus, Sagus, Raphia.*

*b. Mauritieæ* s. *Flabellatæ*, (spec. 6.): — *Lepidocaryum, Mauritia.*

*B.* Coryphinae *nob.* Palmæ normales, rarius arundinac. v. acaulæ, foliis flabellatis, raro pinnatis, lobis induplicatis. *Spadix* ⊣— — articulatus et decompositus (quibusdam 3-or-

gyalis), spathis plurib. subbasilarib. v. vagis, raro una completa. *Flores* mono-diclini, calyce campan. v. trifido, corolla 3-9-partita, stam. 6-36, ovaria 3 v. 1-2-4, ⊣— connata. *Bacca* 1-sperma, solitaria v. duplex et triplex, v. *drupa* 1-4-pyrena; albumen corn. v. cartilag., æquab. v. ruminatum, embr. dorsalis, rarius vertical. v. basilaris:

a. *Corypheae:* flor. plerumque monoclini, ovaria 3 (2-1) sublibera; baccæ 3-2, ⊣— connatæ, rarius solitariæ — (spec. 50): — *Rhapis*, *Thrinax*, *Trithrinax*, *Chamaerops*, *Sabal*, *Copernicia*, *Brahea*, *Licuala*, *Livistona*, *Corypha*.

b. *Borasseæ:* flor. dioeci, primitus immersi spadici robusto; ovaria 3 (2-4) primitus connata; drupa? lobata v. indivisa, 1-4-pyrena, Lodoiceæ maxima (spec. 10): — *Borassus*, *Lodoicea*, *Latania*, *Hyphæne*.

c. *Phœniceæ:* fl. dioeci, spatha simpl. completa; ovaria 3; bacca monosperma; folia pinnata: — *Phœnix* (sp. 9).

*C.* Arecinae *nob.* Palmæ graciles v. robustæ, proceræ v. acaulæ, raro aculeatæ, foliis pinnatilob., rarius simpl. v. bipinnatis, lobis reduplicatis, lanceol. v. sigmoid. et rhomboideolaceris. Spathæ basilares 2-1, passim completa v. vagæ et o. *Spadix* continuus, ramosus, raro simplex: flores plerumque androgyni, ♂ superi, numerosi, ♀ infcros v. interspersos geminatim stipantes: petala nov. sæpius valvata, stam. 6-∞-3; ovaria 3 connata ⊰. *Bacca* ⊣— carnosa, 1-sperma, raro drupacea v. 2-3-sperma. Spec. 132?

*Subtribus* 4: Manicarieæ, Geonomeæ, Areceæ et Caryoteæ?: — *Manicaria*, *Calyptrocalyx*; — *Iguanura*, *Geonoma*, *Bentinckia*; — *Chamædorea*, *Hyospathe*, *Kunthia*, *Leopoldinia*, *Euterpe*, *Oenocarpus*, *Oreodoxa*, *Areca*, *Pinanga*, *Seaforthia*, *Arenga*; — *Orania*, *Harina*, *Iriartea*, *Caryota*.....

*D.* Cocoinae Mart. Palmæ gracil. v. robustæ, sæpe aculeatæ et proceræ, rarius decumb., arundinac., scand. v. a caulæ, foliis pinnatilobis, rarius integr. v. bilobis, lobis redu-

plicat., lanceolat., ellipticis, sigmoid. v. cuneato-laceris. Spatha plerumque solitaria, completa, fusiformis, sæpe lignesc. et sulcata. Spadix continuus, ramosus, raro simplex: flor. plerumque androgyni, ochroleuci v. virentes, ♂ in ramis scrobiculatis, subnudis superi ∞, ♀ interspersi v. inferi, major. et pauciores: stam. 6-50; ovar. 3-locul., raro 2-6-loculare. Drupa 1-sperma, loculis abortivis intra putamen reclusis, raro 2-5-sperma; testa semin. per vasorum reticulum c. endocarpio cohærens; albumen corn. v. amygdalino-oleosum, embr. vertical. v. basilar. ≺.

a. *Aculeatæ* (spec. 46): — *Desmoncus, Bactris, Guilielma, Martinezia, Acrocomia, Astrocaryum, Aiphanes.*

b. *Inermes* (sp. 36.): — *Attalea, Elœis, Cocos, Syagrus, Diplothemium, Maximiliana, Jubœa, Orbignya....*

## Classis VI. Liriophyta.

Caulescentes v. bulbosæ et tuberiferæ; phyllodia vaginantia v. folia perfectiora, aliis spatha v. perigonium prævalent. Fructus sæpius polispermi; semina plerumque albuminosa; embryo quibusd. dicotylis et sacculo, amniotico inclusus.

### *Ordo I. Scitamineae.*

Herbæ perennes, quædam palmiformes, caudice passim tuberifero, fol. integerrim. vaginatis, nervosis v. costulatis; flores epigyni liliacei, perigonio v. androecco defiguratis: hoc plerumque monantherum et stylo v. petalis ⊣ — adnatum.

#### FAM. 55. LIMODORACEÆ s. ORCHIDEÆ.

Caudex ⊣ — notabilis, passim tuberifer, scapum, caulem bulbiformem v. elongatum, quibusdam suffruticosum prodens; folia ima v. alterna, basi vaginantia, passim carnosula, integerrima, nervis longitudinalibus. *Flores* monoclini ≺, epigyni, irregulares, spicati v. solitarii: sepalidia 3 subæqualia, antica v. torsione

floris — postica ; petalidia 2 lateralia, similaria v. dissimilia, minora, majora, raro obsoleta, tertio (labello) antico v. postico, heteromorpho, passim trilobo et callis 2-3 stamina absorpta(?) indicante. *Gynostemium* breve v. elongatum, labello obversum illique sæpe adnatum, sub rostello stigmophorum, anthera perfecta unica (rarius 2-3), biloculari v. plurilocellata, polliniis in massas 2-4-8, ceraceas v. pulverulentas connatis; raro stamen subliberum. *Ovarium* sæpe tortum, 1-raro 3-loculare, 6-costatum, placentis 3 bifidis, c. sepalidiis alternantibus, ovulis ∞ anatropis. *Amalthæa* membranacea v. durior, valvis 3, a costis crassioribus fenestratim solvendis, medio seminiferis; semina scobiformia (raro solida), exalbuminosa.

*A.* Cerioechideae Rchb. monandræ, polline ceraceo:

a. *Ophrydeæ: Orchis*, *Anacamptis*, *Gymnadenia*, *Nigritella*, *Aceras*, *Himanthoglossum*, *Platanthera*, *Herminium*, *Habenaria*, *Bartholina*, *Satyrium*, *Disa*, *Serapias*, *Chamærepes*, *Ophrys*, *Epipogium*....

b. *Malaxideæ: Pleurothallis*, *Octomeria*, *Evelyna*, *Stelis*, *Malaxis*, *Corallorhiza*, *Sturmia*.... *Megaclinium*, *Cirrhopetalum*, *Eria*, *Dendrobium*, *Hexameria*....

c. *Epidendreæ: Epidendrum*, *Schomburgkia*, *Isochilus*, *Brassavola*, *Cattleya*, *Bletia*, *Phajus*....

d. *Vandeæ: Aspasia*, *Ornithidium*, *Sarcochilus*, *Maxillaria*, *Cycnoches*, *Catasetum*, *Stanhopea*, *Cymbidium*, *Calypso*, *Eulophia*, *Zygopetalum*, *Masdevallia*, *Oncidium*, *Brassia*, *Phalænopsis*, *Vanda*, *Aërides*, *Angræcum*, *Calanthæ*.....

*B.* Coniorchideae Rchb. monandræ, polline pulveraceo:

a. *Neottieæ: Ponthieva*, *Cranichis*, *Prescottia*... *Listera*, *Neottia*, *Epipactis*... *Spiranthes*, *Pelexia*.... *Zeuxine*, *Goodyera*, *Physurus*.... *Diuris*, *Orthoceras*.... *Thelymitra*...

b. *Arethuseæ: Microtis*, *Cyrtostylis*, *Eriochilus*, *Lyperanthus*, *Caleya*, *Pogonia*, *Arethusa*, *Asarca*, *Limodorum*, *Cephalanthera*, *Epistephium*, *Vanilla*....

*C.* Cypripedieae: diandræ: *Cypripedium.*

*D.* Apostasieae: juncoideæ, perigonio subregulari, staminib. 2-3, brachynemis, stylo adnatis, amalthæa triloculari, loculicida, polysperma: *Apostasia*, *Neuwieda.*

FAM. 55. CANNACEÆ s. MARANTACEÆ.

Caudex repens v. obsoletus, rhizoniis passim amylaceo-tuberosis, scapo in vaginis foliorum latente, caulem simulante, lamina foliorum integerrima, costata costulata v. sigmoideo-nervia, novella convolutiva. *Flores* monoclini, epigyni, bracteati, spicati: sepala et petala 3 subregularia; *andræceum* defiguratum in parapetala exteriora 2, supera, c. rudimento tertii mediani — et 3 interiora, quorum inferum labellum dicitur, laterale vero superum antheram unicam subunilocularem gerit, polliniis, globosis. *Ovarium* 1-3-phyllum, ovulis solitariis, erectis, campylotropis, v. ∞ horizontalib., anatropis, stylo crassiuscula v. petaloideo. *Amalthæa* unilocularis, quibusd. baccata, v. trilocularis, loculicida; semina solitaria v. plurima, testa dura, albumine farinaceo v. subcorneo, caverna embryonifera v. et pluribus vacuis exsculpto, embryonis subæquilongi, radicula exserta: —*Thalia*, *Muranta*, *Phrynium*, *Calathea*, *Myrosma*, *Canna.*

FAM. 56. AMOMACEÆ s. ZINGIBERACEÆ.

Differunt a Cannaceis floribus quasi inversis calycis limbo 3-dentato v. superne fisso, labello e parapetalis exterioribus coalitis formato et stamini opposito, hujus filamentum, passim canaliculatum, stylum excipit et antheræ loculos 2 disjunctos gerit; ovarium constanter triphyllum, 3-1-loculare; embryo calyptræ amnioticæ inditus; semina et tubera passim aromatica: — *Globba;* — *Roscoea*, *Kämpferia*, *Curcuma*, *Zingiber;* — *Amomum*, *Elettaria*, *Hedychium*.... *Renealmia*, *Alpinia*, *Gastrochilus*, *Hellenia*.... *Costus.*

FAM. 57. MUSACEÆ.

Herbæ perennes, grandes, scapigera v. palmiformes, trunco e vaginis conflato, lamina folior. costulata, sigmoideo-nervia

v. abortiva. Flores cymoso-spicati, spathacei, monoclini v. abortivo-diclini, epigyni; perigonii irregularis, dimorphi v. similaris, 6-meri petalidio postico nano (labello). *Staminia* 5-6, antheris elongatis, normalibus v. abortivis, polliniis globulosis. *Ovarium* innatum, triloculare, synstylum, ovulis anatropis, solitariis, erectis — v. ∞, 2-3-seriatis. *Amalthæa* capsularis, subdrupacea, loculi - v. septicida v. baccata—indehiscens, 3-locularis, 3-∞-sperma; semina passim arillata, testa coriacea, albumine subfarinaceo, embryone oblongo v. fungiformi: — *Heliconia* (capsula septicida 3-sperma); — *Strelitzia*, *Phenakospermum*, *Ravenala*, *Musa*.

## *Ordo II. Coronariæ* nob.

Bulbosæ, caudicatæ v. caulescentes et arborescentes, florib. liliaceis magnis v. minutis, raro 4-meris v. diclinis; stamina 3, 6, 4, 8, raro plura; fruct. capsularis v. baccatus, plerumque polyspermus.

### FAM. 59. BURMANNIACEÆ.

Hbæ graciles, annuæ, rhizoniis passim tuberosis, foliis imis linearib. v. o, caulinis minutis parcis v. o. *Flores* monoclini, regulares, solitarii v. plures, terminales: perigonii corollini tubus adnatus, teres triqueter v. trialatus, sepalidia 3 (mesoptera) alternant c. petalidiis 3 minoribus, ni deficiant; antheræ 3 antepetalinæ, subsessiles, loculis 2, connexivo crasso disjunctis et transverse dehiscentibus. *Ovarium* e carpophyllis 3 antepetalinis, 1-3-loculare, synstylum, placentis axilib. v. parietalibus, multiovulatis. *Amalthæa* apice hians v. loculicida — fenestrata; semina scobiformia: — *Gymnosiphon*, *Gonyanthes*, *Apteria*, *Stenoptera*, *Burmannia*....

### FAM. 60. PONTEDERIACEÆ.

Hbæ hygrobiæ, caudice brevi v. repente, foliis petiolatis, ovatis, sagittatis, cordatis v. reniformibus, nervoso-costulatis,

rarius linearibus. Pedunculi petiolis foliorum dissitorum innati v. ex axillis foliorum, in caulem alternifolium junctorum — et spatha communi prædíti; *flores* monoclini, ebracteolati, solitarii, spicati v. corymbosi, perigonio corollino, tubuloso, irregulari ⊰, limbo 6-mero, novello spiraliter convolutivo; staminib. 6-3, inæqualibus, perigynis, antheris normalib. basifixis. *Ovarium* liberum, triphyllum, 1-3-loculare, synstylum; ovulo unico, pendulo et loculis 2 vacuis — v. ovulis ∞, erectis anatropis. *Capsula* induviata, 3-locularis, loculicida, — v. utriculus monospermus, basi perigonio adnatus; semina teretia striata; embryo albumini farinaceo subæquilongus: — *Pontederia*, *Eichhornia*, *Monochoria*, *Heteranthera*.

FAM. 61. MELANTHIACEÆ s. VERATRACEÆ.

Herbæ caudice ⊣— notabili, quibusdam bulboso v. tuberoso, scapigeræ, exscapæ v. caulescentes, foliis imis v. caulinis, alternis, angustis v. latis, nervosis, integerrimis, ⊣— vaginantibus. *Flores* mono-diclini, caudicales, cymosi pauci v. in spicas simplices v. compositas congesti: perigonio regulari, hexamero, ⊣— dimorpho, dialy-symmero, lobis basi passim nectariferis, novellis induplicatis v. sepalidiis valvatis. *Stamina* 6 (raro (9-12), antheris dorsifixis, extrorsis, bilocularibus, longitrorsum dehiscentibus v. subunilocularibus et campyloschizis, rarius primitus v. demum introrsis. *Ovarium* liberum, raro subinnatum, e folliculis 3 (raro 1) antesepalinis, immediate connatis, ovulis ∞, bi-pluriseriatis, raro geminis, ana-campylotropis; styli 3, ⊣— connati. *Capsula* 3-follicularis, tripartibilis et suturis ventralibus superne hians, poly-oligosperma, raro loculicida v. unifollicularis; semina glob., angulata v. compressa, micrembrya, testa tenui, album. carnoso v. cartilagineo.

a. *Toffieldieæ:* junciformes, spica simplici, perigonio brevi, passim calyculato, antheris bilocul. introrsis, semin. apteris: — *Toffieldia*, *Pleea*.

b. *Veratreæ* (et Helonieæ): caule foliato v. caudice bulboso, scapigero, spica simpl. v. ramosa, perigonio brevi, antheris extrorsis, bi-unilocularibus, capsula septi- rarius loculicida, semin. alatis: — *Helonias*, *Xerophyllum*; *Asagraea*, *Veratrum*, *Zygadenus*....

c. *Melanthieæ:* bulbosæ, caulescentes, rarius subacaules, antheris bilocular. extrorsis, semin. apteris, raphe obsoleta: — *Burchardia*, *Wurmbea*, *Anguillaria*, *Melanthium*, *Androcymbium*, *Erythrostictus*....

d. *Colchiceæ:* bulbosæ, subacaules, cyma uni-pluriflora, perigonii majoris tubo v. unguibus et stylis longissimis; semin. apteris, raphe tumidula: — *Weldenia*, *Merendera*, *Bulbocodium*, *Colchicum*....

### FAM. 62. IXIACEÆ s. IRIDEÆ.

Herbæ caudice tuberoso, bulboso v. obsoleto, passim caulescentes, phyllodiis irideis (equitantibus) v. planis, integris, nervosis, imis v. caulinis — alternis. *Flores* monoclini, regular. v. irregulares, spathacei, epigyni, sepalidiis et petalidiis ternis, ☆ — dimorphis; stamina 3 antesepalina, passim monadelpha, antheris extrorsis bilocularibus. *Ovarium* innatum, loculis. 3 antesepalinis, stylo trifido ≺, ramis passim petalomorphis, ovulis multis v. paucis, anatropis, centralibus, horizontalibus, rarius ascend. v. pendulis, 1-2-3-seriatis. *Amalthæa* capsularis, loculicido-trivalvis, axi placentifero fissili v. integro; semina subglobosa, angulata v. compressa et alata, testa tenui v. crassa, embryone brevi in albumine carnoso v. cartilagineo: — *Crocus*; *Trichonema*, *Geisorrhiza*, *Hesperantha*, *Ixia*; *Galaxia*, *Lapeyrousia*, *Anomatheca*, *Babiana*, *Monbretia*, *Sparaxis*, *Diasia*, *Watsonia*, *Antholyza*, *Gladiolus*; *Sisyrinchium*, *Libertia*, *Vieusseuxia*, *Morœa*, *Iris*, *Beatsonia*, *Cypella*, *Tigridia*, *Ferraria*, *Pardanthus*, *Aristea*, *Witsenia*, *Patersonia*...

FAM. 63. PANCRATIACEÆ. *nob.* (Amaryllideæ).

Herbæ bulbosæ, scapigeræ, rarius caulescentes, phyllodiis nervosis, basi vaginantibus, imis v. caulinis alternis. *Flores* monoclini, regular. v. irregulares, solitarii, umbellati v. racemosi, spathacei, epigynii, tubo perigonii +— producto, limbo 6-mero, +— dimorpho. Stamina 6 ≺ e disco epigyno, tubo v. fauce, passim c. parastemonibus, in coronam faucis staminigeram connatis, antheris normalibus, raro biporosis. *Carpophylla* 3 antesepalina, in ovarium 3-1-loculare connata, stylo simplici erecto v. c. staminibus declinato, ovulis ∞, biseriatis v. definitis, anatropis, horisontalib., raro ascend. v. pendulis. *Amalthæa* capsularis, loculicido-trivalvis, polysperma, raro baccata v. abortu 1-2-locularis et oligo-monosperma; semina globosa, angulata v. compressa, interdum bulbomorpha, testa tenui v. crassa; embryo brevis in albumine carnoso.

a. *Amaryllideæ* nob., bulbosæ, scapigeræ, astephanæ: — *Galanthus*, *Leucojum*, *Strumaria*, *Sternbergia*, *Amaryllis*, *Brunsvigia*, *Griffinia*, *Crinum*, *Hæmanthus*, *Cyrtanthus* ....

b. *Narcisseæ:* bulbosæ, scapigeræ, fauce perigonii coronata: — *Coburgia*, *Calostemma*, *Pancratium*, *Narcissus*, *Gethyllis* ....

c. *Alströmerieæ:* caulescentes, rarius scapigeræ, caudice passim tuberoso v. bulboso: — *Clivia*, *Ixiolirion*, *Alströmeria*, *Doryanthes*? ....

d. *Agaveæ*, giganteæ ≺, longævæ, semel florentes, phyllodiis passim dentatis: — *Agave*, *Fourcroya*.

FAM. 64. HÆMODORACEÆ.

Caudex brevis v. arborescens, cauli- v. scapiger, phyllodiis nervosis, alternis v. imis, irideis v. planis. *Flores* monoclini, regular. v. irregulares, epigyni, rarius hypogyni, racemosi, perigonio colorato, extus sæpe rudi, piloso v. lanato, tubo +— supra ovarium producto. *Stamina* 3 antepetalina v. stami-

nodiis aut staminibus sepalinis aucta, quibusdam indefinita, antheris normalibus. *Ovarium* innatum (v. liberum) e carpophyllis 3 antepetalinis ≺ 3-1-loculare, synstylum, ovulis solitariis, geminis v. indefinitis, peltatis, amphitropis, raro anatropis. *Amalthæa* loculicido - v. septifrage-trivalvis, quibusdam capsula libera induviata v. nucula monosperma; semina peltata v. basifixa, testa duriuscula, glabra v. pilosa, albumine duro ≺.

a? *Hypoxideæ:* hbæ acaules, flor. epigynis, regularib., 6-andris, carpophyllis antesepalinis, ovulis amphitropis; amalthæa sicca v. baccata, 3-2-1-locularis, seminib. atris, strophiolatis, embryone albumini carnoso subæquilongo: *Hypoxis*, *Curculigo* ....

b. *Hæmodoreæ*, caulescentes v. scapigeræ, flor. epi-hypogynis subirregularibus, 3-6-andris, carpophyllis antepetalinis: *Xiphidium*, *Wachendorfia*, *Lophiola*; — *Hæmodorum*, *Dilatris*, *Lachnanthes*, *Anigosanthus*, *Tribonanthes* ....

c. *Vellosieæ*, epigynæ, polyandræ, ≺, caudice passim arborescente: *Barbacenia*, *Vellosia*.

### FAM 65. BROMELIACEÆ.

Caudex brevis v. elongatus, sæpe parasitans, scapo quibusdam caulescente, phyllodiis vaginantibus, canaliculatis, sæpe spinoso-dentatis et epidermide squamoso-secedente. *Flores* monoclini, ☆ — regulares, cymoso-spicati v. paniculati, spathacei, epi-hypogyni, calyce trisepalo, novello subvalvato, corolla longiori, synpetala, trifida, basi nectariflua, marcescente et tortili. Stamina 6, ☆ — libera, antheris normalibus. *Ovarium* triloculare, innatum, liber. v. semiliberum; stylo simpl. v. trifido, ramis passim tortilibus, ovulis anatropis, ∞ axilibus, biseriatis, horizontalibus, ascendentibus v. definitis et pendulis. *Amalthæa* baccata v. *capsula* libera v. semilibera, loculi-septicido-trivalvis, sæpe dura; semina oblonga v. ovata, interdum comosa, testa coriacea, albumine farinaceo, micrembryo:

a. *Tillandsieæ* — capsula libera : — *Tillandsia*, *Guzmannia*, *Bonapartea*, *Dyckia*, *Pourretia*, *Dasylirion*....

b. *Pitcairnieæ* — capsula semilibera : *Pitcairnia*, *Brocchinia*.

c. *Ananasseæ* — amalthæa baccata : — *Billbergia*, *Aechmea*, *Bromelia*, *Ananassa*....

FAM. 66. TULIPACEÆ. s. Liliaceæ.

Hbæ bulbosæ, caule simplici ≺, 1-∞-floro, foliis alternis elongat., nervosis, rarius imis, v. opposit., verticillatis, petiolat. et reticulato-venosis. *Flores* monoclini, perigonio liliaceo, regulari, dialymero ≺, sepalidiis et petalidiis passim homomorphis et basi fovea v. rima nectariflua præditis; stam. 6, hypogyna, vix perigonio adnata, antheris normal. v. perischizis. *Ovarii* synstyli loculi 3 antesepalini, ovulis ∞ centrali-horizontalib. biseriatis ≺, anatropis. *Capsula* loculicida, raro septicida : semina ∞, biseriata et compressa ≺, testa tenui, fusca v. pallida, raro spongiosa, tegmine tenuissimo, albumini carnoso ≺ adnato; embryo parvus, axilis ≺ : — *Gagea*, *Lloydia*, *Calochortus*, *Orithyia*, *Tulipa*, *Erythronium*; — *Petilium*, *Fritillaria*, *Rhinopetalum*, *Lilium*; — *Methonica*?

FAM. 67. ASPHODELACEÆ.

Hbæ scapigeræ, bulbosæ v. caulescentes, caudice v. rhizoniis passim tuberosis, foliis sparsis, nervosis, partim carnosis v. fistulosis. *Flores* cymoso-racemosi, panicul. v. umbellati, perigonio liliaceo, utplurim. regulari, dialy- v. symmero, passim dimorpho v. inconspicuo. Stam. 6 (3) perigyna v. fere hypogyna, antheris introrsis. *Ovarium* liber, raro semiinnatum, synstylum, loculis 3 antesepalinis, ovulis ∞, biseriatis, anatropis, raro amphi-campylotropis, geminis v. solitariis. *Capsula* 3-locul., loculicida, raro subunilocular. v. dialymera (*Tricoryne*); semina formâ varia, sæpe nigra, testa et teg-

mine ⊣ — connatis; albumen carnos. v. subcorneum; embryo rectus v. curvatus.

a. *Gilliesieæ:* Hbæ bulbosæ, chilenses, habitu Gageæ, perigonio herbaceo, durabili, irregulari, patente, stamina 6 brevia, partim abortiva et connata, c. appendicibus tori alternantia, (vid. Kunth, Enumer. plant. T. IV. 1843): — *Gilliesia*, *Miersia.*

b. *Scilleæ:* Hbæ bulbosæ ⊲ scapigeræ, flor. regular., umbellat. v. racemosis: — *Allium*, *Nothoscordum*, *Tulbaghia*, *Sowerbæa*, *Triteleja*, *Brodiæa*, *Calliprora*, *Bessera*, *Milla*, *Agpanthus*; — *Uropetalum*, *Albuca*, *Ornithogalum*, *Drimia*, *Eriospermum*, *Puschkinia*, *Ledebouria*, *Urginea*, *Scilla*, *Agraphis*, *Muscari*; *Bellevalia*, *Hyacinthus*, *Eucomis*, *Daubenya*, *Massonia*, *Lachenalia*, *Veltheimia*.....

c. *Asphodeleæ:* Hbæ scapigeræ, caulescentes v. caudice arboreo elatæ, rhizoniis passim tuberosis, cymis racemosis, floribus c. pedicello articulatis ⊲: — *Cyanella*, *Conanthera*, *Echeandia*, *Stypandra*, *Arthropodium*, *Thysanotus*, *Tricoryne*, *Chlorophytum*, *Anemarrhena*, *Phalangium*, *Czackia*, *Funkia*, *Hemerocallis*, *Phormium*, *Blandfordia*, *Trachyandra*, *Bulbine*, *Asphodelus*, *Eremurus*, *Kniphofia*, *Aloë*, *Lomatophyllum*, *Yucca*.....

d. *Aphyllantheæ:* juncoideae, caudice exiguo v. arborescente, florib. capitatis v. spicatis. Australasicae, specie 1 europæa: — *Alania*, *Laxmannia*, *Borya*, *Aphyllanthes*, *Johnsonia*, *Xanthorrhœa.*

### FAM. 68. SMILACACEÆ.

Frutices, passim scandentes, arbores v. herbae, caudice repente, foliis nullis, altern. v. verticillatis, nervosis v. nervoso-venosis, integerrimis ⊲. *Flores* regular., mono-diclini, cymoso-solitarii, racemosi v. fasciculati, pedicellis articulatis, sepalidiis et petalidiis ternis v. 2-4-6, ⊣ — discretis. Stamina 4, 6, 8, 12, hypo- v. perigyna, rarius monadelpha, antheris basifixis ⊲,

normalib. v. extrorsis. *Ovarium* 3-2-4-loculare, syn- v. schizostylum, ovulis centralib. paucis, raro solitar. v. plurimis, atropis v. amphitropis, raro anatropis. *Fructus* saepius baccatus, 3-4-2-1-locularis, loculis mono-oligospermis: semina subglob., testa tenui, embr. parvo, albumine corneo:

a. *Uvulariecæ nob.* — hbae caudicatae, platyphyllae, flor. subsolitariis, antheris passim extrorsis, ovulis anatropis, bacca 3-4-locul., 3-∞-sperma v. capsula loculicida: — *Uvularia*, *Streptopus*, *Disporum*, *Kreysigia*, *Schelhammera*, *Drymophila*, *Paris*, *Trillium*, *Medeola*..

b. *Convallariecæ nob.*: hbae caudicatae v. frutices scandentes, cymis racemosis, glomeratis v. umbellatis; ovulis atropis; bacca oligosperma, raro capsula: — *Polygonatum*, *Convallaria*, *Smilacina*, *Majanthemum*, *Smilax*; — *Herreria*?

c. *Asparageæ nob.*: caudex parvus v. arborescens, phyllodia angusta et scapum paniculatum — v. phyllodiis imis suppressis, caulem scandentem foliatum, aut scapos frutescentes aphyllos (Ruscus, Asparagus etc.) promens; pedicellis medio articulatis et passim phyllomorphis; ovulis amphitropis ≺, bacca 1-3-9-sperma: — *Eustrephus*, *Geitonoplesium*, *Myrsiphyllum*, *Ripogonum*, *Callixene*, *Dianella*, *Ruacophila*, *Luzuriaga*, *Ruscus*, *Asparagus*, *Cordyline*, *Dracæna*.

d. *Roxburghieæ:* frutices, Ruscum v. Smilaces aemulantes, cymis 1-3-floris, flor. magnis, 3-4-meris (Lilii, Paridis), ovario 2-3-phyllo, uniloculari; bacca polysperma v. capsula bivalvis: — *Philesia*, *Lapageria*, *Roxburghia*.

### FAM. 69. TAMACEÆ.

Herbae v. frutices volubiles, caudice exili v. maximo, subgloboso, foliis alternis ≺ petiolatis, nervosis v. nervoso-venosis, integris v. palmatis. *Flores* dioeci ≺, cymoso-racemosi, axillares, perigonio liliacco minuto, 6-3-andro, antheris normalib. v. extrorsis, — v. ovario innato, schizostylo, triloculari, ovulis anatrop., binis — superpositis v. solitariis. *Amal-*

*thœa* capsularis, loculicida, compresso-triquetra, trilocularis v. abortu 2-1-locular. aut baccata: semina solitar. v. gemina, pendula, compressa, marginanta v. subglobosa, albumine cartilag., embr. minuto: — *Rajania*, *Dioscorea*, *Tamus*, *Oncus*.

FAM. 70. TACCACEÆ.

Hbae caudice scapigero, foliis integris, palmatis v. bipinnatifidis. *Flores* monoclini, regulares, cymoso-umbellati, spicati v. solitarii, perigonio liliaceo v. 8-mero, epigyno, antheris 6-8 normal., subsessilib., connexivo petaloideo impositis; ovario 3-4-phyllo, placentis parietal. v. centralibus, ovulis plurib. adsc. v. horizontal., amphi- v. anatropis, stylo crasso, peltato, 3-8-lobo. *Amalthœa* saepius baccata et unilocularis, 1-∞-sperma: semina ovata v. renif., albumine carnoso, embryone minuto.

a. *Tupistreæ:* folia integra, nervosa, flores racem. v. solitarii, ovar. 1-3-4-loculare, amalthæa mono-oligosperma: — *Ophiopogon? Peliosanthes;* — *Rhodea*, *Tupistra*, *Aspidistra*.

b. *Taccеæ:* fol. integra v. divisa, flor. umbellati et involucrati; placentæ 3 parietal., simpl. v. bilamellatæ; amalthæa unilocul. polysperma: — *Ataccia*, *Tacca*.

## *Ordo III. Spadicifloræ.*

Liriophyta anomala; flores minimi, plerumque nudi, caudice, caule, foliis (quibusdam multifidis) v. spatha magis evolutis; fructus sæpe baccatus v. monospermus, embryo mono-dicotylis, nudus v. saccatus.

*A.* SPATHACEAE. Hbæ caudicatæ, passim arborescentes; spatha quibusdam maxima, raro nulla, flor. spadicei, rarius perigoniati; embryo monocotylis, nudus.

FAM. 71. CALLACEÆ (Aroideæ).

Hbæ, quandoque gigantеæ v. arboresc. et succo lacteo, acri, volatili scatentes, caudice scapigero, tuberoso, repente v.

caulescente. Phyllodia v. folia e caudice solitaria v. alterna et terminalia, petiolo basi vaginante, lamina passim maxima, cordata, sagittata, nervis sæpe validis, pinnatis, palmatis, pedatis peltatisve, integerrima v. pertusa et varie dissecta, novella convoluta. *Spadix* termin. v. axillar., simplex, basi, rarius rhachi *spathæ* monophyllæ, passim coloratæ, persist. v. deciduæ, raro deficientes v. folio simillimae (Orontium, Acorus) adnatus, e toto florifer v. axi superne denudata. *Flores* ebracteati, androgyni, rarius hermaphroditi: hi sepalis 4-6-3, staminibus oppositis totidem et monogyni; illi nudi, ad stamina et pistilla solitaria reducti, androgyni, rariss. diclini, nunc distincti et continui vel paragoniis sejuncti, ♂ superioribus, nunc intermixti, ♂ crebrioribus. *Stamina* libera v. varie interse connata: antherae sess. v. filamentis suffultae, extrorsae, loculis sæpe binis connexivo crasso imersis, longitrorsum v. vertice dehiscentib. et pollen catenatim conglutinatum eructantibus. *Ovaria* uni-rarius 2-3-∞-locularia, sæpiss. aggregata, libera v. connata; ovulis solitar. 2, ∞, basilar. v. parietalibus, erectis, adscend., horiz. v. pendulis, atropis, rarius campylo- v. anatropis; stigm. capitato v. discoideo, raro lobato, sessili v. styloso. *Fructus* baccati ≺, indehisc., 1-∞-spermi; semina subglob. v. angulata, testa coriacea, crassa ≺; albumen copios., carnos. v. farinac., raro O: embryo tunc hippocrepicus, alias rectus, teretiusculus, sæpius antitropus, cum rimula longitudinali, quæ plumulam 2-3-phyllam fovet. Genera 46, spec. 286. Kunth.

a. *Ambrosinieæ* nob. Hbæ caudice stolonifero v. tuberoso; foliis integris nervosis. Spadix androgynus + — adnatus; antherae sessiles in apice v. latere axeos et remotae ab ovario styloso, solitario v. pluribus ad basin axis verticillatis et connatis; ovula ∞ atropa, ascend. v. horizontalia; paragonia vix ulla; sem. albuminosa. Gen. 4. sp. 16: — *Pistia*, *Ambrosinia*; *Cryptocoryne*, *Stylochaeton*.

b. *Aroideæ: nob.* Hbæ caudice tuberoso, v. caulescentes, scandentes et arborescentes, foliis integris, cordat. sagitt. v. palmatis, pedatis et peltatis. Spadix androgynus, raro spathæ adnatus, dioecus v. pseudo-hermaphroditus, passim fœtidus v. svaveolens, cum paragoniis et superne nudus ≺, antheræ lib. v. coadunatæ, quibusdam biporosæ, connnexivo minori v. crassissimo; ovaria ∞, libera, 1-∞-locul., ovulis 1-∞, atropis; sem. albuminosa. Genera 29, spec. 182:— *Arisarum, Arisœma;— Biarum, Arum, Typhonium, Sauromatum, Dracunculus; — Pythonium, Amorphophallus; — Remusatia, Gonatanthus, Calocasia, Caladium, Xanthosoma, Acontias, Syngonium...; — Philodendron, Calostigma..., Spathicarpa, Dieffenbachia, Atherurus...; — Aglaonema, Richardia....*

c. *Calleæ,* Schott. Hbæ caule elongato, foliis subbifariis, tandem remotis, vaginis stipularib. petiolar. v. oppositifoliis. Spadix pseudo-hermaphr.: filam. planiuscula, antheris bilocul. longitr. dehisc.; ovar. 1-pauciloc.; ovula erecta, anav. campylotropa; sem. albumin. v. exalbuminosa. Gen. 4, sp. 19: — *Calla, Heteropsis, Monstera, Scindapsus.*

d. *Orontieæ* s. *Hermaphroditanthæ.* Hbæ caudice abbreviato, repente, erecto v. scand., phyllodiatæ v. fol. palmipinnati- et pedatisectis, vaginæ Callearum v. O; spatha colorata v. phyllodinea, imo O; flores hermaphrod. et perigoniati, ovaria 1-2-3-loc. ovulis 1-3-∞, pendulis, campylov. atropis, raro anatropis; baccæ 1-2-3-loc., 1-3-spermæ; sem. utplurimum albuminosa. Gen. 9, spec. 70: — *Pothos, Lasia, Anthurium, Spathiphyllum; — Dracontium, Symplocarpus; — Orontium; — Gymnostachys, Acorus.*

*B.* Gymnanthae. Frutices, arbor. v. hbae, caule articulato, rarius caudicatae, scapigerae, foliis integris; spadices graciles ≺ florib. nudis, bracteolatis, raro c. involucro spathaceo; embryo dicotylis, saccatus v. nudus.

FAM. 72. PIPERACEÆ *nob.*

Hbae perennes, passim succulentae, rarius annuae, scapigerae et caudicatae, saepe frutescentes, caule nodoso-articulato, fasciculis vasorum ( ligneis ) sparsis v. ad peripheriam caulis confertis. Folia ima, alterna, opposita v. verticillata, integerrima, quibusdam peltata v. sessilia, nervosa v. venosa, novella complicata v. convoluta. Stipulae O v. petiolares et oppositifoliae. *Flores* monoclini, rarius diclini, spicati, rachi crassae ⊰ immersi, sessiles v. pedicellati, nudi, bracteati, terminal., axillar. v. oppositifolii. Stam. 2 v. plura, lib. v. ovario adnata, antheris bilocul. ⊰, peri- v. campyloschizis; pollinia laevia globosa. Ovarium mono- pentaphyllum, 1-5-loculare, ovulis atropis, solitariis, erectis v. pluribus ascendentibus. *Bacca* monosperma ⊣— carnosa, passim 3-4-gona, rarius *capsula* v. *syncyclium* 3-5-folliculare. Albumen farinac., carnos. v. subcartilagineum, passim cavum v. radiatum; embryo parvus, apicalis, bifidus (dicotylis), saccatus.

Genera 26 (an reducenda?), spec. 600? additis Saurureis. Vid. Miquel, Systema Piperacearum, 1843-4 et London Journ. of Botany, 1845.

a. *Saurureæ:* hbæ hygrobiæ, caudicatæ, caulesc. v. scapigeræ, involucro 4-8-phyllo, colorato passim præditæ, gynoeceo 3-5-phyllo, in syncyclium folliculare v. fructum lobatum, ⊣— baccatum, 2-∞-spermum abiente. Differunt a Piperaceis ut Spiræa ab Alchemilla; an Familia quarta hujus ordinis?:— *Spathium? Anemiopsis, Houttuynia, Gymnotheca, Saururus.*

b. *Peperomieæ:* hbæ partim repentes et acaulæ v. suffrutices, fol. estipul., altern., oppos. v. verticillatis, sæpe succulentis; spicæ axill. v. terminal., solitar. v. confertæ; flor. monoclini, diandri, stigma pilosum, raro lobatum; fructus monospermi; spec. 220? — *Verhuellia, Phyllobryon, Acrocarpidium, Peperomia, Erasmia.*

c. *Pothomorpheæ:* frutic. v. arb., foliis alternis, vaginis stipulaceis; spicæ axillares, plerumque confertæ, flor. 1-2-clini, fruct. 1-spermi: — *Pothomorphe, Macropiper.* (spec. 16).

d. *Piperaceæ nob.*: *veræ* Miq.: frutic. v. arb. foliis alternis, stipulis oppositifoliis v. petiolaribus, his deciduis ⊰; spicæ oppositifol. solitariæ, flor. 1-2-clini, sessil. v. pedicellati, stamina 2-6, stigm. 2-5, fructus 1-spermi: spec. 350? — *Chavica, Rhyncholepis, Cubeba, Piper, Muldera, Coccobryon; Callianira*(?) *Enckea, Peltobryon, Sphærostachys, Nematanthera, Artanthe*; — *Ottonia, Zippelia.*

FAM. 73. CHLORANTHACEÆ.

Arb. fruticuli aromatici, raro hbæ, ramis nodoso-articulatis, foliis oppos., simpl., serratis ⊰, vagina brevi stipulacea. *Spicæ* passim compositæ, termin. v. axillar.; flores mono-diclini, nudi, passim bracteolati: antheræ subsessiles, bilocul., perischizæ, in flor. monoclinis solitariae v. duabus unilocularib. auctae, filamentis brevissimis, dorso ovarii adnatis; *ovarium* astylum, ovulo unico pendulo, atropo. *Drupa* tenera, albumen carnosum, embryo minutus, nudus, radicula infera: — *Chloranthus, Hedyosmum, Ascarina* ?

## *Ordo IV. Nymphaeales s. Hygrobiæ.*

Aquaticae v. ascidiis aquiferis instructae; flores epi-hypogyni, saepe 4-meri et magni; fructus uni - multilocularis; embryo nudus v. saccatus, passim exalbuminosus v. dicotylis.

FAM. 74. VALLISNERIACEÆ (Hydrocharideæ).

Hbae aquaticae, caudice stolonifero, scapigero v. caulescentes, phyllodiis denticulatis v. foliis petiolatis, nervoso-venosis, caudicalibus, nov. convolutivis, rarius caulinis oppositis v. verticillatis. *Flores* spathacei, abortu dioeci, rarius monoclini: sepala 3, inferne connata, nov. subvalvata, petala totidem alterna, nov. corrugata, raro 0; *stamina* sepalina 3 v.

6-9-12, antheris erectis, bilocular., plerumque perischizis. *Ovarium* innatum, staminodiis et toro passim coronatum, polyphyllum, 1-9-loculare, synstylum, stigmata radiantia, passim bifida; ovula anatropa, parietalia v. septalia, ∞ et ascendent. ≺. *Amalthæa* coriaceo-carnosa, submersa, 1-∞-locularis; semina exalbumin., e pariete v. septis gelatinosis ascendentia, testa duriuscula, echinulata ≺; embryo rectus monocotylis, gemmulam +— manifestam in rimula laterali transversa fovens.

a. *Anacharideæ s. Hydrilleæ:* caulescentes, foliis oppos. v. verticillatis, ovario uniloculari, 3-stigmeo: — *Udora*, *Anacharis*, *Hydrilla.*

b. *Vallisnerieæ:* acaules, phyllodiatae, ovario eodem: — *Vallisneria, Blyxa.*

c. *Hydrocharideæ nob.* acaules, scapiflorae, ovario 6-9-loculari: — *Stratiotes, Enhalus*, *Ottelia*, *Bootia*, *Limnobium*, *Hydrocharis.*

### FAM. 75. NYMPHÆACEÆ.

Hbae aquaticae, tenerae (= Potamogetoni) v. maximae, caudice prostrato, rhizoniis vado adfixae, foliis longe petiolatis, basi bifidis v. peltatis, passim dentatis, novell. margine involutis. *Flores* monoclini, solitarii (Victoriae maximi), sepalis 4-5-6-3, +— connatis inter se et c. ovario. Torus urceolaris, ovaria cingens, stamina et petala gerens, a calyce liber. v. cum illo connatus: petala multa, pluriseriata, inæqualia, distincta, raro connata, in stamina normalia sensim transeuntia. *Ovarium* polyphyllum, multiloculare, synstylum, polystigmeum, kionide crassa, subexserta; ovula ∞, anatropa, ex omni pariete septorum. *Bacca* pulposa, toro inclusa v. *amalthæa* multilocularis, pansperma; semina ooidea, testa carnoso-coriacea, albumine farinaceo v. carnoso-friabili, axi cavo ≺; embryo extrarius, parvus, bilobus, tunicatus (fere Piperacear.):

a. *Barclayeæ:* calyce libero, corolla synpetala epigyna: — *Barclaya.*

b. *Victorieæ:* epigynae, dialypetalae: — *Anneslea, (Euryale), Victoria.*

c. *Nupharеæ:* dialypetalae, calyce libero: — *Nymphæa, Nuphar.*

d. *Nelumbieæ:* differunt sepal. et petalis imbricatis, toro obconico, basi petala et stamina gerente et in foveolis ovaria seggregata, brachystyla, ovulis solitariis v. (2) e funiculo adscendente pendulis (anatropis); nuculae ovales, semine inverso, exalbuminoso, testa spongiosa; cotyledones 2 crassae, concavae, gemmula 2-3-phylla, valde evoluta tunicata: — *Nelumbium.*

### FAM. 76. CABOMBACEÆ.

Hbæ aquaticæ, vado affixæ, caulescentes, foliis submersis oppositis, capillaceo-multifidis, emersis peltatis, integris v. sagittatis. *Flor.* monoclini, solitar., axillares, pedunculati: sepala et petala alterna 3-4, nov. imbricata, stamina hypogyna, di-polycycla, normalia; *ovaria* 2-18, verticillata, ovulis 2-3, anatropis, pendulis, superpositis. *Folliculi* 1-3-spermi, solitarii v. plures; semina fere Nymphæae. His et Ranunculis intermediæ, an jungendæ?: — *Brasenia, Cabomba.*

### FAM. 77. SARRACENIACEÆ.

Hbæ paludosæ, perennes, foliis imis, petiolis ascidiomorphis, lamina parva, scapo unifloro v. racemoso: sepala 2 v. 5, nov. imbricata, passim c. involucro parvo triphyllo, petala totidem alterna et stamina hypogyna, polycycla, normalia. *Ovarium* 3-5-loculare, stylo brevi parvo 3-lobo v. maximo peltato-pentagono; ovula centralia ∞, pluriseriata, anatropa. *Capsula* 3-5-locularis, loculicida, polysperma; testa solida v. alata, albumen carnos., embryo minutus. — Drosereis affines Rchb. (?): — *Sarracenia, Heliamphora.*

FAM. 78. NEPENTHACEÆ.

Suffrutices orgyales et minores, ligno ezonato, fasciculis spiriductuum numerosis, per medullam sparsis et sub cortice confertis. Folia alterna, petiolo basi vaginante, in laminam lanceolatam, cirrho simpl. v. ascidiifero terminatam dilatato, operculum ascidii articulatum (lamina folii?). Racemus subterminalis, florib. dioecis, parvis, perigonio calycino 4-partito, vix dimorpho, novell. imbricato: androeceum *s*ymmerum, antheris 16 bilocul., extrorsis; *gynoeceum* liber., 4-phyllum, 4-locul., akioneum, ovulis ∞, central., ascend. pluriseriatis, anatropis, stigma sessile, lobis 4, septis respond.. *Capsula* 4-gona, loculicide-4-valvis; sem. ∞, imbricata scobiformia; embryo albumini carnoso subæquilongus, subteres, dicotylis, radic. brevis infera (an Aristolochiaceis affiniores?): — *Nepenthes* (sp. 9).

*Nota.* Liriophyta nostra, organorum æquilibrio sublato, habitum diversissimum sibi vindicant, e. g. Tulipa et Piper unguiculatum! at jam Tulipa c. Asparagis, Ruscis, Tacca, Smilacib. et Dioscoreis micranthis longe in eodem ordine naturali militat; quid mirum, si ex alio classis ordine Piperaccæ, Aroideis pluribus simillimæ, subjungantur.

Reichenbachii canones de *thesi, antithesi* et *synthesi* huic classi applicando et *proëmium* addendo, thesin in *Coronariis* (Liriophyta *cat'exochyn*) invenies, — synthesin in *Nymphaealibus*, Dicotylearum vicinarum attributa usurpantibus. *Spadiciflorae*, notas quasdam e classi præcedente et sequentibus mutuantes, Coronariis opponuntur (antithesis). *Scitamineae*, passim arundinaceæ et floribus defiguratis, proëmium s. vestibulum classis efficiunt.

Similia de Calamophytis valebunt: *Glumiflorae* — thesin, *Palmae* synthesin reliquorum ordinum, *Juncagines*, ad Liriophyta vergentes, — antithesin, *Potamophila* — proëmium classis, anomaliis a Sporophoris et Pseudospermis petitis plenum, efficiunt.

## Circulus IV. EUSPERMAE
## (Dicotyledones s. Dicotyleæ ≺).

Cormus (caulis, truncus, scapus) raro caudicatus v. bulbosus, sæpius rhizomati, rhizoniis addito, oppositus; fasciculi lignei c. spiriductibus variis plerumque in strata concentrica 1 — ∞ *(Jahresringe)* compacti, stratis alburni et libri no-

vellis invicem oppositis (rarius per medullam sparsi — in primis classium membris); canalis medullaris et cortex septis (radiis) medullaribus graciliorib. plerumque interstincti. Folia situ et forma omnivaria, sæpius reticulato-venosa et composita. Organorum floralium numerus plerumque quinarius, 1 - ∞ - cyclus. Embryo dicotylis, raro cotyledone altera abortiva, v. plejocotylis (per coalitionem v. divisionem?). — Sectiones 3 et classes 6 sequentes.

Sectio I. Incompletae. Flores minuti, nudi v. incompleti, calycini, raro completi (perigonio dimorpho) v. magni.

## Classis VII. Sepalanthae *nob.*

Perigonium O v. mono-plejomerum, mono-di-pentacyclum, calycinum, rarius corollinum; plurimis androeceum monocyclum, fructus monospermi et semina albuminosa. Folia simpl. rarius lobata (Proteaceis polymorpha); in caule et perigonio plurium analogia quædam cum Monocotyleis.

### *Ordo I. Atriplicastra s. Curvembryæ.*

Flores parvi, mono-diclini, perigonio 1-2-5-cyclo v. O; ovarium 1-12-phyllum, ovulis amphitrop. v. atropis, sæpius solitariis; embryo utplurim. curvatus excentricus, spiralis, c. albumine farinaceo, rarius carnoso v. nullo; fasciculi lignei plerumque disjuncti.

#### FAM. 79. CHENOPODIACEAE.

Hbæ, frutices, sapore fatuo, salino, acido, vix odorae v. graveolentes, caule quarundam volubili v. articulato-aphyllo, foliis alternis, estipulatis, quibusdam oppositis, carnosis et incisis. *Flores* parvi, mono-diclini, regulares ☿, axillar., solitarii v. cymoso-conferti, sessiles v. pedunculati, perigonio calycino,

1-5-mero, stamin. oppositis, monocyclis v. pauciorib.; toro hypo-perigyno, raro lobulato. *Ovarium* compress. v. depressum, stylo ± — longo, 1-2-4-stigmeo, ovulo unico, e basi erecto v. e funiculo ascendente pendulo, amphitropo. *Utriculus* integer (raro circumscissus), perigonio demum alterato— alato, spinescente v. baccato — et subadnato induviatus; semen verticale v. horizontale, reniforme, tegmine simpl. v. et testa crust. fusca, atra, albumine farinaceo, copioso, v. evanescente, embryone arcuato, annulari, plano-spirali v. spirali-conico (cochleari).

*A.* Cyclolobeae: embryo annularis v. arcuatus; albumen centrale.

a. *Salicornieæ:* caulis articulatus, plerumque aphyllus; flor. thyrsoidei, sessil. compacti; semen verticale, testa membranacea: — *Salicornia*, *Halostachys*, *Halocnemum*, *Arthrocnemum.*

b. *Chenopodieæ:* caulis continuus; flor. monoclini v. polygami, homæomorphi; seminis vertical. v. horizontalis testa membr. v. crustacea: — *Camphorosma*, *Panderia*, *Sclerolæna*, *Didymanthus*; — *Aplochlamis*, *Corispermum*, *Agriophyllum*; — *Blitum*, *Agathophyllum*, *Roubieva*; — *Hablitzia*, *Beta*, *Enchylæna*, *Londesia*, *Echinopsilon*, *Kochia*, *Cyclolepis*, *Chenopodium*, *Rhagodia*, *Teloxys*....

c. *Atripliceæ:* caulis continuus; flor. polygami, dimorphi (♂ v. ♀ diverso); sem. varia: — *Ceratocarpus*, *Spinacia*, *Atriplex* (*Obione*, *Halimus*), *Acnida*, *Axyris*, *Eurotia*, *Sarcobatus*, *Batis*? ...

*B.* Spirolobeae: embryo plano-spiralis v. spiraliconicus; albumen O v. parcum; folia teretia, semiteret. v. O:

d. *Salsoleæ:* (et Suædineæ): — *Schanginia*, *Sucæda*, *Schoberia*; — *Traganum*, *Salsola*, *Horaninowia*, *Halimocnemis*, *Halogeton*; — *Nanophytum*, *Anabasis* (*Brachylepis*)....

FAM. 80. AMARANTACEÆ.

Differunt a Chenopodiaceis caule nunquam articulato, sed passim arborescente, foliis utplurimum integerrimis et costatis (Petiver. stipulatis), perigonio passim scarioso, 2-3-bracteato, subirregulari, abortivo, tandem dense pubescente v. colorato, quibusd. dimorpho, filamentis passim connatis et c. parastemonibus, quibusdam numerosis, antheris 1-2-locularibus, medifixis, ovario sæpius compresso, 1-∞-stigmeo v. multiplici, ovulis solitariis v. pluribus, hinc et fructu vario, passim baccato, embryone nunquam spirali, sed complicato quarundam.

a. *Gomphreneæ:* ovario 1-ovulato, antheris 1-2-locular:— *Iresine*, *Alternanthera*, *Gomphrena;* — *Polycnemum*, *Trichinium*, *Achyranthes*, *Aërva; Desmochæta; Amarantus.*

b. *Celosieæ:* ovario multiovulato, antheris 2-locular.: — *Celosia*, *Lestibudesia*, *Deeringia.*

c. *Petiverieæ:* hbæ, frutic. foliis stipulatis, staminibus isomeris, alternis v. multis, utriculo sicco, alato, spinescente v. baccato, albumine farinaceo v. O; embryone recto v. curvato, cotyledonib. foliaceis, inæqualibus, majori minorem amplexante: — *Seguiera*, *Petiveria; Mohlana*, *Rivina.*

d. *Phytolacceæ:* hbæ v. frutices quædam volubiles v. petalophoræ, staminib. isomeris, alternis v. multis, ovariis 2-12, verticillatis, ovulis campylotropis, fructu (syncyclio) sicco-echinato, muricato v. baccato: — *Limeum, Semonvillæa; Microtea*, *Giesekia*, *Phytolacca*, *Ercilia; Gyrostemon* et *Codonocarpus*?

FAM. 81. POLYGONACEÆ.

Hbæ, frut. arbores, quædam volubiles, caule ramisque nodoso- articulatis, foliis alternis, rarius oppositis, ni ima sint, integris, rarius incisis v. sessilibus, petiolo basi vaginante, sæpius ochreæ (stipulis connatis) inserto. *Flores* monoclini v. diclini, solitarii v. fasciculato- verticillato- spicato- v. pani-

culato-cymosi; quibusdam involucrati v. pedicello c. anthopodio articulato (= Asparago). *Perigonium* calycinum v. corollinum, 3-4-5-6-merum, novellum imbricatum, quibusdam dimorphum, persistens, rarius deciduum. *Stamina* 2—15, e toro perigyno ⊣— notabili, lobis perigonii opposita, raro alterna, solitaria v. cuique lobo bina – terna, antheris normalibus, dorsi – rarius basifixis. *Ovarium* liberum v. vix adhærens, 2-3-4-phyllum, uniloculare, ovulo unico, basilari, sessili, *atropo*, raro e funiculo basilari inverso, demum erecto; styli 2-3-4, ⊣— connati v. subnulli, stigmatibus simpl., incrassatis v. penicillatis. *Nucula* compressa v. 3-4-angularis, quibusdam alata, et petalidiis v. sepalidiis increscentibus, v. perigonio toto, emarcido v. baccato induviata. Seminis testa membranacea, embryo albumini farinoso subæquilongus, rectus v. arcuatus, excentricus v. axilis, cotyledonibus linearibus v. late-foliaceis et flexuosis, radicula supera. — Spec. 350. C. A. Meyer, *in Mem. Acad. Sc. Petersburg.*

a. Rumiceæ: hbæ, suffrut. perigonio 6-4-5-mero, 4-6-8-9-andro, 2-3-gyno, petalidiis in fructu erectis, increscentibus; nucleo indiviso, embr. axili v. laterali: — *Oxyria*, *Emex*, *Rumex*, *Rheum*, *Atraphaxis*, *Tragopyrum*, *Gonopyrum*, *Polygonella.*

b. Eriogoneæ: hbæ, suffrut. exochreati ≺, fol. oppos. ternis v. imis, florib. involucratis, perigonio 6-mero, subæquali, in fructu erecto, 6-9-andro, 3-gyno, embr. axili: — *Eriogonum*, *Chorizanthe*, *Mucronea*, *Pterostegia.*

c. Polygoneæ: hbæ, frut. arbores, perigonio 3-4-5-6-mero, 3-15-andro, 2-3-4-gyno, stigmatib. capitatis ≺.

α. *Eupolygoneæ:* hbæ, suffrut. perigonio 3-4-5-mero, in fructu erecto, 3-8-andro, 2-3-gyno, nucleo indiviso ≺: — *Königia*, *Polygonum*, *Fagopyrum*, *Ceratogonum.*

*β. Calligoneæ:* frutic. subaphylli, perigonio 5-mero, in fructu reflexo, 12-15-andro, 4-gyno, nucleo 4-lobo, embr. axili: — *Pterococcus*, *Calligonum*, *Calliphysa.*

*γ. Coccolobeæ:* arbores, perigonio 5-mero, in fructu baccato et connato, 8-andro, 3-gyno, nucleo 6-lobo, ruminato, embr. axili? — *Coccoloba.*

*δ. Triplarideæ:* frutic. arbores mono-diclines, perigonio 6-mero, 6-9-andro, 3-gyno, sepalidiis in fructu accrescentibus, erectis, fructu libero 3-gono v. 6-lobo: — *Podopterus*, *Triplaris*, *Ruprechtia.*

d. Brunnichieæ: frutices volubiles, cirrhosi, perigonio 5-mero, 8-10-andro, 3-gyno, ovulo pendulo e funiculo basilari libero, tandem erecto, nucleo 6-lobo, embr. excentrico: — *Brunnichia;* — *Antigonon?*

### FAM. 82. MENISPERMACEÆ.

Frutices sarmentosi, tenaces, ligno passim ezonato, foliis alternis, integris, palmatis v. peltatis, stipulatis (ut Polygonac. frutesc.). *Flores* diclini, plerumque racemosi, paniculati, minuti; sepala decidua 1-20, mono – pentacycla, æqualia v. inæqualia, homo-dimorpha (sepalidia et petalidia solitaria, bina, 3-4-5^na^). *Stamina* sepalis opposita et numero æqualia v. plura, libera v. connata, antheris extrorsis, 1-2-4-locular., transversim v. longitrorsum dehiscentibus – v. introrsis. *Ovarium* 1 excentricum, tandem ⊣ — curvatum, v. 2-3, 4, 6, 8, libera v. connata, passim gynophoro brevi sublata; ovula solitaria, parietalia, *amphitropa,* micropyle supera, rarius infera; styli 0, simpl. v. 3-fidi, in ovariis curvatis demum basilares, stigm. simpl. capitato v. bifido. *Drupa* solitaria, ⊣ — curvata, v. *syncyclium* 2-3-drupaceum v. 8-caryum. Semen rect. v. arcuatum, testa tenui, quibusdam anfractuosa, albumine carnoso, parco v. 0; cotyledones lineares v. latæ, sæpe disjunctæ, quibusdam longissimæ, spiraliter convolutæ, radic. brevi: — *Agdestis, Menispermum, Pselium, Cocculus, Chon-*

*dodendrum*, *Meniscosta*, *Jödes*, *Spirospermum*, *Trichoa*, *Coscinium*, *Anamirta*, *Cissampelos*; — (*Natsiatum* et *Phytocrene?*).

## *Ordo II. Asarastra.*

Caulis passim nodosus et fasciculis ligneis disjunctis; folia integra, fissa v. O; flor. epigyni, perigonio ligulato magno v. 3-10-mero, 1-2-cyclo, antheris extrorsis, perischiz. v. valvatis, ovario 1-6-loculari, ovulis anatrop. ∞-1; amalthæa 1-∞-sperma; embryo varius, albumine copioso v. O. (An *Nepenthes* hujus ordinis — et *Cassyta* Laurinis reddenda?).

### FAM. 83. ARISTOLOCHIACEÆ.

Hbæ caudice repente v. contracto, tuberoso, et frutices, passim volubiles et aromatici, ligno ezonato, caule nodoso-articulato ≺; foliis integris v. pedatifidis, venosis et pedatinerviis, rarius stipulatis. *Flores* epigyni, axillares, solitarii, fasciculati v. racemoso-cymosi, monoclini ≺, perigonio tubuloso 1-2-3-lobato, passim amplissimo, deciduo, v. regulari, 3-5-6-fido, persistente. *Androeceum* antheris 6-12 (5, 9, 40), bilocularibus, extrorsis ≺, sessilibus et stylo adnatis, toro quandoque mediante, v. liberis, brachynemis, apiculatis. *Ovarium* innatum, 6-3-4-loculare, ovulis ∞ centralibus, 1-2-seriatis, horizontalib. v. adscend., anatropis; stylo brevi, 3-4-6-lobo. *Amalthæa* 3-4-6-follicularis, septicida, v. baccata; semina ∞, rarius subsolitaria, angulata, bracteata, albumine carnoso v. subcorneo, embryone minimo, cotyledonibus ante germinationem vix manifestis: — *Asarum*, *Heterotropa*, *Aristolochia*, *Bragantia*, *Thottea*; *Trichopodium?*

Affinitas quædam c. Menispermac. Cucurbitac. Nepenthac. Tamaceis et Rafflesiaceis.

### FAM. 84. BEGONIACEÆ.

Hbæ annuæ v. frutices exotici, caule ramis et petiolis nodoso-articulatis, succo aqueo, acidulo, radicibus quarundam

amaro - adstringentibus v. acribus; foliis alternis, crassiusculis ≺, integris, dentatis v. palmatilobis, nervoso-venosis, sæpe inæquilateris, novellis margine involutis, stipulis geminis liberis, deciduis v. subochrealibus. *Flores* monoeci, in cymis axillaribus — masculi centrales, fœminei peripherici: illis perigonium corollinum sepalidiis 2 majoribus, subrotundis, novellis applicativis, petalidia 2 alterna minora includentibus, tandem patens, polyandrum, *antheris* brachynemis, loculis 2 angustis, connectivum latum marginantibus, polliniis oblongis, lævissimis, unisulcatis. Perigonii fœminei tubus c. ovario connatus et alis 3 heteromorphis v. obsoletis insignis, limbus corollinus 4-9-partitus, lobis pluriseriatim imbricatis. *Ovarium* 3-loculare, septis c. alis tubi alternantibus, placentis 3-6, ex axi prominulis; ovulis ∞, anatropis; styli 3 crassi, bifidi, stigmatibus tortuosis v. capitatis. *Amalthœa* perigonio emarcido coronata, samaroidea ≺, loculis tribus maturitate medio findendis et septis ab axi placentifero solvendis. *Semina* numerosa, minuta, testa tenuis, longitudinaliter striata, embryone axili, teretiusculo, albumini carnoso (v. nullo?) subæquilongo, cotyledonibus brevissimis: — *Begonia.* — Familia, chemice et organologice Polygonaceis non omnino diffinis.

### FAM. 85. GYROCARPACEÆ.

Arbores v. frutices., exotici, erecti v. scandentes, vix aromatici, mucilaginosi (?), ramis teretiusculis, novellis pubescentibus, foliis alternis, petiolatis, integris, 3-nerviis, v. trilobis et trisectis, estipulatis, gemmis. nudis (?). *Flores* monocl. v. polygami, minuti, regulares, axillares, paniculato-cymosi, pauci fructiferi, perigonio epigyno, simplici v. dicyclo, calycino v. intus colorato, 4-5-6-10-lobo, novello induplicativo v. subimbricato. *Androeceum* lobis perigonii omnibus v. externis isomerum et oppositum, filamentis basi biglandulosis v. nudis, antheris introrsis valvatis (Berberidear.), polliniis minutis globosis, reticulatis (Sparattanthelii). *Ovarium* simplex, stylo-

sum, stigmate subobliquo, ovulo unico, pendulo, anatropo. Amalthæa drupacea, sæpe perigonii lobis externis increscentibus apice alata, semine inverso, exalbuminoso, cotyledonibus magnis spiraliter contortis v. contortuplicatis, rugosis, radicula parva, plumula diphylla v. conica: — *Sparattanthelium*, *Gyrocarpus; Illigera?*

FAM. 86. CASSYTACEÆ. nob.

Fruticuli filiformes, volubiles, aphylli, parasitici, mucilaginosi, florib. monoclin. minutis, spicatis v. glomeratis, bi-tribracteolatis. *Perigonii* liberi durabilis limbus hexamerus, dimorphus, sepalidiis 3 minimis. *Stamina* 9 petaloidea et staminodia 3, 4-plici cyclo lobis perigonii opposita, antheris bilocularibus, valvatis (Lauri), 6 exterioribus introrsis, 3 interioribus extrorsis et filamento breviori biglanduloso. *Ovarium* simplex, liberum, lageniforme, (ovulo 1 pend., anatropo?). *Nucula* perigonio baccato induviata; semen subglobosum, exalbumin., cotyledon. 2 hemisphæricis. Habitus Cuscutæ, flores Lauri: — *Cassyta*, spec. 8.

## *Ordo III. Santalastra.*

Arb. frut. passim aromatici, raro hbæ; folia plerumque opposita, estipul. et integra; flor 1-2-clini, perigonio 3-∞-mero, mono-polycyclo, antheris variis, 1-∞-cyclis, ovariis lib. v. innatis, 1-locul., ovulis anatrop. paucis, pend. ≺; fruct. calycini, induviati v. nudi, 1-spermi ≺, sem. utplurim. albuminosa.

FAM. 87. SANTALACEÆ.

Hbæ, frut. arbores, foliis alternis v. oppositis, estipulatis, quibusd. minutis v. obsoletis. *Flores* monocl. epigyni ≺, rarius diclini, bracteati v. calyculati, racemosi, spicati, paniculati v. solitarii: perigonium simplex, tubo adnato ≺, limbo 3-4-5-fido, intus colorato, deciduo v. persistente, novello valvato.

*Stamina* isomera, opposita, brachynema, antheris normalibus, raro 4-locularibus. Torus epigynus, obsoletus v. carnosus, angulatus, passim in glandulas, barbulas v. parapetala, staminibus interposita v. postposita, effiguratus. *Ovarium* innatum v. semiliberum (et liberum), uniloculare, ovulis 2-3-4, ex apice placentæ centralis liberæ filiformis v. crassiusculæ pendulis, anatropis, raro unico v. binis ex apice ovarii pendulis; styli apice 2 - 3 - ∞ - lobo. *Amalthæa* monosperma, nucamentacea v. drupacea (raro fruct. liber), albumine carnoso, copioso, embryone brevi, recto v. obliquo.

a. *Santaleæ* (veræ): — *Quinchamalium, Thesium, Choretrum, Leptomeria, Osyris, Fusanus, Santalum, Myoschilos*....

b. *Nysseæ:* arbores fol. altern., passim dentatis, flor. ♂ decandris, et monoclinis — ovulo unico, ex apice ovarii pendulo, albumine parvo: — *Nyssa.*

c. *Garryeæ:* arbores dioecæ, fol. oppositis, ramis 4-gonis, spicis axillar. pendulis, decussato-bracteatis, staminibus 4 alternis; stygmata 2, ⊣— elongata, ovula 2 pendula, amalthæa 1-2-sperma : — *Garrya*...

d. *Exocarpeæ:* arb. v. frut. articulati, foliis sparsis, minutis v. majoribus, florib. 3-4-5-meris, ovario et nucula v. drupa liberis: — *Anthobolus, Exocarpus.*

### FAM. 88. MYRISTICACEÆ.

Arbores, frutices Asiæ tropicæ præcipue, succo styptico, ab aëre rubescente, et ætherelæo passim scatentes, organis novellis dense pubescentibus; *foliis* alternis, simpl. integerrimis, coriaceis, venosis, estipulatis, novellis conduplicatis. *Flores* dioeci, laterales et axillares ⊰, cymoso-racemosi, panicul., glomerati, luteoli; perigonio simpl. coriacco, 3-2-4-fido, nov. valvato, sæpe minimo. *Androeceum* symmerum, antheris 3-15, extrorsis, bilocularibus, longitrorsum dehiscentibus, columnæ adnatis, rarius liberis. *Ovarium* liberum, solitarium

(raro altero abortivo auctum), ovulo 1, erecto et anatropo (?), stigmate subsessili, sublobato. *Bacca* bivalvis, monosperma; semen erectum, arillo carnoso totum v. magna ex parte involucratum, testa dura, tegmine rugoso, albumine ruminato, sebaceo-carnoso, embryone parvo, cotyledonibus subfoliaceis, planis v. plicatis, blastemate minuto: Affinitas quædam c. Anonaceis, maxima — morphologica et chemica c. Monimiaceis: — *Myristica, Knema, Pyrrhosa.*

FAM. 89. MONIMIACEÆ.

Arbores, frutices aromatici, hæmisphærii australis, foliis oppositis, rarius alternis, simpl. sempervirentibus, passim serratis v. tomentosis. estipulatis. *Flores* mon-dioeci, rarius monoclini., cymosi, racemosi, perigonii limbo 4-10-fido, biseriato, passim dimorpho. *Stamina* indefinita, toro perigyno undique v. varia altitudine inserta, quædam abortiva, antheris normalibus v. valvatis, connexivo passim producto. Ovaria 2-20, distincta, fundo v. toro perigyno inserta, ovulo unico, anatropo, erecto v. pendulo, stylo terminali, laterali v. basilari. *Drupæ* semine inverso, v. *nuculæ* caudatæ sem. erecto, perigonio accrescente sæpius induviatæ. Seminis inversi embryo major, cotyledonibus planis, — erecti embryo minutus, cotyledonibus divaricatis; albumine carnoso-oleoso.

a. *Atherospermeæ:* di-monoclinæ, antheris valvatis, ovulo erecto, stylo laterali piloso: nuculæ caudatæ micrembryæ: — *Atherosperma, Laurelia (Pavonia), Doryphora.*

b. *Monimieæ:* diclinæ, antheris normalibus, ovulo pendulo, stylo terminali; drupae macrembryæ: — *Boldoa (Ruizia), Tetratome, Citrosma, Monimia, Ambora.*

*Nota.* Ruizium et Pavonium hac in familia memoria condere juvabit.

FAM. 90. CALYCANTHACEÆ.

Frutices Americæ bor. et Japoniæ, caule 4-gono, fasciculis lignosis 4, lignum centrale cingentibus, foliis integerr., op-

positis, estipulatis. *Flores* præcoces v. foliis coætanei, term. v. axillares, solitarii: torus carnosus concavus (ramulus contractus anthomorphus) sepalis decussato — multiseriatis, coloratis, obsitus, intus stamina polycycla sepaloidea, antheris extrorsis, bilocularibus, parastemones et ovaria acro-monostyla, toro ⊣— immersa gerens: ovula solitaria, adscend. anatropa (raro altero abortivo). *Nuculæ* 1-2-∞, toro carnoso induviatæ; seminis exalbuminosi testa membranacea, cotyledones foliaceæ convolutæ. (Fructu quodammodo Rosam, perigonio Cactum æmulant, cætera Monimiacear.: — *Calycanthus*, *Chimonanthus*.

## *Ordo IV. Laurastra.*

Arb. frutic. acres v. aromatici ≺, raro hbæ; folia sæpius sparsa, integra v. lobata (Proteac. polymorpha), estipulata; flor. 1-2-clini, perigonio 2-8-fido, 1-2-cyclo, toro hypo-perigyno, androec. 1 - ∞ - cyclo, antheris norm. v. valvatis; ovarium liberum, ovulis anatrop. ≺, solitar., raro confertis. Nucula, drupa v. folliculus, semin. utplurim. exalbuminosis.

### FAM 91. ELAEAGNACEÆ.

Arbores v. frutic. fol. sparsis v. oppositis, integerrim. v. dentatis, lepidotis, estipulatis. *Flores* mono-diclini, axillares, solitar. v. racemosi: ♂ amentacei, 2-4-sepali, 4-8-andri, antheris subsessilib. normalibus; floribus ♀ et monoclinis perigonium tubulosum limbo 2-4-5-fido, nov. imbricato v. coniformi, toro ad faucem annuli -- v. coniformi, margine v. inter lobulos antherifero. *Ovarium* liberum, monophyllum, stylo simplici, ovulo 1, adscend. anatropo. *Caryopsis*, perigonio imo baccato v. drupaceo induviata, embryone amygdalino, albumine parco: — *Hippophaë*, *Shepherdia*, *Conuleum*, *Elæagnus*.

### FAM. 92. PROTEACEÆ.

Arbores, frutic., raro herbæ, fol. sparsis ≺, integris v. vario modo divisis, estipulatis. *Flores* monoclini ≺, racemosi, spicati

et involucrati: sepala 4, +— connata, nov. valvata (?); stamina 4 episepala, brachynema, raro hypogyna, v. synanthera, passim squamis hypogynis alternis aucta, antheris normal. ⊀. *Ovarium* lib., monophyllum, stylo simplici, ovulo 1 v. 2 collateralib. v. ∞, ad suturam biseriatis, amphi-anatropis. — Nux, samara, drupa 1-2-sperma v. folliculus coriac. v. ligneus, 2-∞-1-spermus, septo quibusdam spurio (e priminis ovulorum); semina globosa, compressa v. alata, embryone 2-∞-cotyledoneo, exalbuminoso.

a. *Proteeæ:* ovulum 1, nux v. samara: — *Aulax*, *Leucadendron*, *Petrophila*, *Isopogon*, *Protea*, *Leucospermum*, *Mimetes*, *Spatalia...*; *Synaphœa*, *Conospermum*, *Stirlingia*; *Franklandia*.

b. *Persoonieæ:* ovula 1-2, nux, samara v. drupa monoraro disperma: — *Symphyonema*, *Cenarrhenes*, *Persoonia*, *Brabejum*, *Guevina*....

c. *Grevilleeæ:* ovula 2-4-∞, folliculus 1-∞-spermus: — *Anadenia*, *Grevillea*, *Hakea*, *Lambertia*, *Xylomelum*, *Rhopala*, *Knightia...*; *Embothrium*, *Telopea*, *Lomatia*...

d. *Banksieæ:* ovula 2, folliculus spurie bilocularis: — *Banksia*, *Dryandra*, *Hemiclidia*.

### FAM. 93 DAPHNACEÆ.

Hbæ, frut. arbores, foliis integris, alternis v. oppositis, estipulatis. *Flores* mono-diclini, axill. v. terminales, solitarii, spicati v. capitati et involucrati, perigonii tubulosi limbus 4 5-6-fidus, novellus imbricatus, quibusdam integer v. dimorphus et squamis hypogynis v. peristomis auctus. Stamina 2 sepalina v. 4, lobis perigonii opposita v. alterna, passim dupla (8, 10, 12), biseriata, antheris normalibus? *Ovarium* liberum, monophyllum, stylo terminali v. sublaterali, ovulo 1 pendulo, anatropo, raro 2-3 superpositis. *Drupa* v. *nucula* nuda v. induviata, raro folliculus 2-3-spermus, embryo amygdalinus, albumen O v. +— copiosum:

a. *Daphneæ:* Hbæ, frutic., perigonio 4-mero ≺, squamis hypogynis v. O, ovulo 1, semine quibusd. albuminoso: — *Drapetes*, *Passerina*; *Diorthron*, *Stellera*, *Arthrosolen*, *Schoenobiblos*, *Pimelea*, *Lachnæa*, *Daphne*, *Edgeworthia*, *Dais*, *Dirca*, *Wickströmia*....

b. *Gnidieæ:* frutic. perigonio 4-5-mero, squamis peristomis, ovulo unico: — *Struthiola*, *Gnidia*, *Thymelina*, *Lasiosiphon*, *Linostoma*.

c. *Aquilarieæ:* frutices perigonio 5-4-mero, 8-10-andro, squamis peristomis v. hypogynis, ovulis 2, folliculo v. drupa disperma ≺ biloculari ≺: — *Pediea* et *Funifera*?, *Drimyspermum*, *Cyathodiscus*, *Pseudais*, *Gyrinopsis*, *Leucosmia*, *Gyrinops*, *Aquilaria*.

d. *Hernandieæ:* arbores, frutic., perigonio 5-6-8-mero, 3-12-andro, stigmate crasso, drupa magna, nuda v. induviata: — *Sarcostigma*, *Hernandia*; *Inocarpus*.

### FAM. 94. PERSEACEÆ. s. LAURINÆ.

Arbores, frutices aromatici, foliis sparsis ≺ integerrimis, raro lobatis, venosis, 1-3-5-nerviis, estipulatis. *Flores* monodiclini, regulares, racem., paniculati v. umbellati-involucrati, *perigonio* 6-3-4-8-fido, lobis 1-2-cyclis, novellis imbricatis v. obsoletis. *Torus* carnosus c. basi perigonii persistente sæpius cum fructu increscens. *Stamina* lobis perigonii opposita et numero æquali v. multiplici, filamentis saltem interiorum glanduliferis, antheris continuis, omnibus introrsis v. interiorum extrorsis, intimis v. extimis sæpe abortivis, loculis geminis v. bigeminis et valvula simplici, tandem adsurgente. *Ovarium* 3-phyllum, uniloculare, ovulo 1 (2), pendulo, anatropo, stigmate subtrilobo. *Bacca* v. *drupa* monosperma, pedicello passim incrassato excepta v. toro et perigonio circumscisso v. omni induviata; embryo exalbuminosus, amygdalinus, radicula retracta brevissima, supera.

a. *Daphnidieæ nob.:* gemmæ perulatæ, folia 1-3-5-nervia, perennia v. annua, flores fasciculati v. glomerati, dioeci, raro monoclini; stamina 9-6-15, antheris 2-4-locellatis, omnibus introrsis; staminodia minus exculta v. O: — *Sassafras, Benzoin; — Dodecadenia, Actinodaphne, Daphnidium, Litsæa.*

b. *Laureæ nob.:* gemmæ subnudæ; folia venosa, raro annua; flores dioeci, raro monoclini, glomerati v. paniculati; perigon. 6-3-4-8-merum; stamina 9-6-12-21, non omnibus omnia fertilia, antheris 2-4-locellatis, omnibus introrsis v. 3-6 intimis extrorsis: — *Laurus, Polyadenia, Tetranthera...; Ocotea, Camphoromœa, Oreodaphne, Göppertia, Leptodaphne, Teleiandra.... Dicypellium?..*

c. *Perseeæ nob.:* gemmæ subnudæ, folia perennia, venosa, raro 3-plinervia; flores monoclini, paniculati, racemosi v. subglomerati, 3-9-andri; antheræ 2-4-locellatæ, intimis extrorsis; staminodia + — exculta v. O; fructus sicc., baccat. v. drupaceus, nudus v. induviatus: — *Acrodiclidium, Aydendron...; Nectandra; Dehaasia, Hufelandia, Alseodaphne, Persea...; Phoebe, Eudiandra, Cryptocarya, Agathaphyllum, Caryodaphne.....*

d. *Cinnamomeæ:* gemmæ subnudæ v. perulatæ; folia triplinervia, perennia; flores monoclini ≺, paniculati; stamina 9, antheris 4-locellatis, 3 intimis extrorsis; staminodia 3 perfectiora v. plura; bacca cupulata: — *Cinnamomum, Camphora.*

## Classis VIII. Anomalanthae.

Flores parvi, nudi v. incompleti, pleramque amentacei et diclini, quibusd. completi; folia simpl. et stipulata ≺, raro composita v. opposita; ovar. lib. v. innatum, ovula sæpius solitaria; cotyledon altera quibusd. multo minor. Habitu magis quam floribus conveniunt, sæpe Urticæ v. Populo consimiles, arborescentes et lactescentes.

## *Ordo I. Crotonastra.*

Plantæ statura, foliis et florib omnivariis, sæpius lactescentes; ovar. 3-locul., rarius 1 - ∞ - locul. v. innatum, ovula anatropa, pendula, raro erecta, solitar. v. gemina; fructus di-polycoccus v. 1-4-locular., sem. solitar. albuminosa.

### FAM. 95. HALORAGACEÆ.

Hbæ v. fruticuli, foliis alternis, oppositis, verticillatis v. imis, angustis v. latis, integerrimis v. dentatis, estipulatis, in aquaticis passim heteromorphis et pinnatisectis. *Flores* mono-di-clini, regulares et parvi ☿, axillares v. spicati, perigonio' O, simpl. v. duplici: calyx adnatus, limbo O v. 4-3-2-mero; petala O v. isosepala, alterna, novella valvata v. imbricata, decidua ☿. Stamina 1, 2, 3, 4, 6, 8, antesepalina, antheris normalibus ☿, sæpe crassis v. longis. *Ovarium* 1-2-3-4-loculare, ovulis pendulis, anatropis, solitariis, ni septa evanescant; stigmata passim villosa v. papillata. *Nux* subdrupacea, 1-4-locularis, 1-4-sperma; embryo teres, brachylobus, in axi albuminis carnosi ☿, Trapæ exalbuminosus. — Plantæ summe heteromorphæ, exiles et robustæ, Epilobiaceis vix affines.

a. *Hippurideæ:* hbæ aquat. ☿ fol. verticillatis, flor. apetalis, monandris, nuce 1-sperma: — *Hippuris.*

b. *Haloragеæ nob.:* hbæ aquat. v. fruticuli terrestres, foliis situ et forma variis; flor. 1-2-clini, apetali v. 2-4-petali, stamin. 1-2-cycla, ovar. 1-4-locul., nux 1-2-3-4-locul., 1-4-sperma, angulata v. alata: — *Myriophyllum*, *Mejonectes*, *Proserpinaca*, *Serpicula*, *Haloragis* (et *Goniocarpus*), *Loudonia.*

c. *Gunnereæ:* hbæ terestres, acaules, rhizomatosæ, fol. cordat. v. reniform., dentatis, coriac. hirtis, scapo brevi v. orgyali, flor. minutis, monoclin. v. dioecis, cymoso-spicatis, calyce 2-3-fido v. O, apetalo v. dipetalo, ovario 1-ovulato, nuce drupacea 1-sperma: — *Milligania*, *Gunnera.*

d. *Trapeæ:* hbæ natantes, foliis submersis pinnatisectis, rhizoideis (= Myriophyllo), emersis rosulatis, coriac., costatis, rhomboid. ≺, dentatis, petiolis inflatis; flor. completi 4-meri, axillar. solitarii, ovario biloculari, synstylo, ovulis anatrop. solitariis, pendulis. Nux monosperma, sepalis spinescentibus et acromphalo magno; embryo exalbuminosus, cotyledone crassa maxima et minima alternis. — An Hydrocharideis affiniores?: — *Trapa.*

FAM. 96. CALLITRICHACEÆ.

Hbæ tenellæ, aquaticæ, fol. oppositis, integerrimis, 1-3-nerviis, florib. mono-diclinis, axillar., nudis, bibracteatis. Stamen 1, raro 2, anthera reniformi, unilocul., campyloschiza. Gynoeceum 4-locul., distylum, tandem pedunculatum, ovulis solitar. amphitropis pendulis. Utriculi 4 compressi, semina hilo subapicali, testa tenui, embryone axili, albumini carnoso subæquilongo, brachylobo: — *Callitriche.*

FAM. 97. STACKHOUSIACEÆ.

Suffrutic. Australasici, sæpe microphylli, foliis sparsis, integris, crassiusculis, florib. monoclin. subirregular. spicatis, 3-bracteatis: calyx 5-fidus, corolla alternans, hypocraterimorpha, inferne et superne 5-fida, subperigyna; filam. alterna, lib. inæquilonga, inclusa, antheris norm. basifixis. Gynoeceum liber., 3-5-locul., kionide præditum, ovulis solitar. erect., anatropis, stylis simplicibus +— connatis. Fructus 3-5-coccus, coccis apteris v. alatis, a kionide durabili, sulcata solutis, monospermis (= Geranio); testa membranacea, albumen carnosum; embryo axilis, subæquilong. brachylobus. An Rutaceis v. Pyrolaceis affiniores?: — *Stackhousia*, *Tripterococcus.*

FAM. 98. EUPHORBIACEÆ.

Hbæ, frut., arbores, quædam cactoideæ, succo lacteo v. aqueo, foliis sparsis ≺, integris v. palmatis, quibusdam stipulatis. *Flores* diclini v. pseudo-monoclini, nudi, bracteati v.

perigonio simplici vario, rarius duplici. Stamina defin. v. indefinita, libera v. coalita, antheris bilocularibus, in- v. extrorsis. *Gynoeceum* liberum, 3-2-∞-loculare, kionide stylos distinctos et bifidos v. coalitos gerente, ovulis solitariis v. geminis collateralibus, appensis, anatropis, exostomio passim mitreolato. *Fructus* 2-3-∞-coccus, coccis passim ab axi solvendis, integris v. fissilibus; seminum testa crustacea, passim carunculata v. arillata, albumen carnoso-oleosum, embryo axilis, cotyledonibus plano-convexis v. foliaceis, radicula supera.

a. *Euphorbieæ:* ovula solitaria, flores apetali, androgyni in involucro communi: — *Euphorbia*, *Pedilanthus*, *Dalechampia*, *Schismatopera* ....

b. *Ricineæ Rchb.:* ovula solitar., flor. apetali, spicati v. glomerati: *Maprounea*, *Colliguaja*, *Excœcaria*, *Commia*, *Hura*, *Hippomane*, *Stillingia* ...; — *Mercurialis*, *Acalypha*, *Plukenetia*, *Tragia*, *Mappa*, *Alchornea* ...; *Adriania*, *Rottlera*, *Gelonium*, *Ricinus*, *Manihot*, *Siphonia*, *Mabea* ...

c. *Crotoneæ:* petalophoræ, passim aromaticæ, ovulis solitariis; — *Mozinna*; *Crozophora*, *Julocroton*, *Croton*, *Ditaxis*, *Ricinocarpus*, *Baloghia*, *Jatropha*, *Elæococca*, *Aleurites*, *Anda*....

d. *Buxeæ:* ovulis geminis, raro petalophoræ: — *Putranjiva*, *Sarcococca*, *Drypetes*, *Pachysandra*, *Buxus*, *Securinega*, *Savia*; *Cluytia*, *Andrachne*; *Pseudanthus*, *Phyllanthus*, *Xylophylla*, *Emblica*, *Cicca*.

Generum dispositio nova curanda.

## *Ordo II. Urticastra.*

Hbæ - arbor. passim lactesc., foliis integr. v. divisis, stipulatis; flores diclini ≺, cymoso-heterotaxi v. amentacei, perigon. simpl. v. O, androeceo saepius monocyclo, ovario, ovulis, fructu et embryone variis; semina solitaria ≺, albumine carnoso v. O.

FAM. 99. ANTIDESMACEÆ.

Arbores, frutic. (et scand.) exotici, foliis sparsis, coriac., integris, passim dentatis, stipulis caducis. *Amenta* axillar., diœca, perigonio 2-3-5-partito, nov. imbricato, toro hypogyno parvo, staminib. 3-5, exsertis, oppositis v. alternis, antherarum normalium loculis disjunctis, ovario libero, uniloculari, 3-5-stigmeo, ovulis geminis collateral. pendulis, anatropis. *Drupa* monosperma, putamine scrobiculato, albumine carn. copioso, cotyledonib. magnis foliac., rad. brevi: — *Antidesma* (*Stilago*), *Falconeria*, *Pyrenacantha*.

His trias sequens tribuum, minus cognitaram, subjungi potest?

b. *Lacistemeæ:* arbor. v. frut. Americæ, distiche ramosi, fol. alt., sempervir. coriac. integerr. v. vix serratis, stipul. deciduis; flores amentacei, axillar., mono-diclini, singuli bractea, bracteolis 2-4, perigonio 4-mero et passim toro crasso provisi, stamen 1, apice bicruri loculos 2 disjunctos acroschizos gerens; ovarium liber. 1-2-3-loculare, stigm. 2-3-subulatis, ovulis plurib. parietal. pend. anatropis; fructus coriacei v. carnosi parci, unilocular., 2-3-valves, 1-3-spermi; seminis testa crustac., album. carnosum, embr. phyllolobus: — *Synzyganthera*, *Lacistema*.

c. *Scepeæ:* arb. indicæ, fol. altern., simpl., stipulatis; flor. dioecis ♂, amentac., 2-6-sepalis, 2-5-andris; ovario lib. bilocul., ovulis 4 pend. anatrop.; fructu bilocul., 2-4-spermo; sem. arillata: — *Scepa*, *Lepidostachys*, *Hymenocardia*.

d. *Forrestiereæ:* frutic. americani, fol. opposit simpl. coriac., amentis axillar. 1-2-clinis, bracteis decussatis, vacuis v. 1-6-floris: sepala 2-4, stam. 2-8, anther. perischizis; ovar. bilocul, ovulis 4 pend. anatrop., fructu 1-spermo?: — *Forestiera* (*Adelia*), *Piptolepis*. — An Syringaceæ inopifloræ?

FAM. 100. URTICACEÆ.

Hbæ, frut., arbores, sæpe pilis ⊣ — urentibus exasperatæ, succo aqueo, raro lacteo, foliis oppos. v. alternis, integris., serrat. v. palmatis, stipulatis ≺. *Flores* sæpius diclini, spicato-paniculato-glomerato-cymosi, passim bracteati, involucrati v. receptaculo plano—cavo inserti. ♂ sepala 4-5-3-1, novella imbricata, stamina lib. totidem, opposita, filamentis transverse-rugosis ≺, primo inflexis, dein elastice prosilientibus, antheris normalibus dorsifixis, ovarii rudimentum. ♀ sepala 1-2-4-5, passim inæqualia v. connata, obsoleta et staminodiis aucta; ovarium liber. (?) uniloc., ovulo 1 erecto, orthotropo v. parietali, pendulo, campylo-amphitropo, stylo termin. v. sublaterali, longiori v. nullo, stigma capitat. v. 2-∞-fidum. *Utriculus*, *nucula* v. *drupa*, passim perigonio membran. v. baccato induviata, aliis sorosus v. syconus. Semen rect. v. arcuatum, testa tenui, albumine carnoso, ⊣ — copioso, embryone axili:

a. *Urticeæ*: ovulum erectum, atropum, stigma capitat. v. laciniatum, caryopsis v. nucula passim c. induvio membr.; semen rectum, albuminosum, embryo antitropus, cotyled. elliptic. planis, rad. cylindrica: — *Urtica*, *Elatostemma*, *Pilea*, *Böhmeria*, *Parietaria*, *Forsköléa*....

b. *Celtideæ:* frut. arbores, fol. sparsis, integerr. v. serrat. passim 3-nerviis; flores mono-diclini, solitar. v. racemosi, 5-meri, ovario 2-stigmeo, ovulo appenso amphitropo; *drupa* semine et embr. arcuatis, albumine ⊣ — copioso: — *Celtis*, *Sponnia*, *Mertensia*.

c. *Moreæ:* hbæ—arbores, lactescentes ≺, flores spic., capit. v. receptaculo plano-cavo inserti, 3-4-andri, ovulo pariet. amphitropo. Nuculæ perigonio baccato induviata, liberæ v. in sorosum aut syconum congestæ, sem. et embr. arcuatis, albumine ⊣ — copioso: — *Morus*, *Maclura*, *Broussonetia*, *Ficus*, *Dorstenia*..

d. *Cannabinæ:* hbæ, frutic. volub., succo aqueo, fol. oppos. ≺ lobatis; fl. ♂ 5-meri, racemosi, ♀ subglomerati, bracteati et bracteolati, ovario 2-stigmeo, ovulo campylotropo pendulo. Nuculæ bracteis stipatæ, embryone conduplicato v. spirali, albumine vix ullo: — *Cannabis*, *Humulus*.

FAM. 101. ARTOCARPACEÆ.

Arbores v. frut. lactescentes, exotici, foliis sparsis, integerr., serratis, palmatis v. pinnatilobis, stipulis caducis. *Flores* diclini, capitati, passim involucrati, rarius spicati: ♂ sepala 1-2, 3, 4, sæpe connata, stamina totidem, opposita, antheris normal., rarius peltatis, bilamellatis; ♀ solitarii v. plures, in involucro urceolato v. polyphyllo inclusi v. in receptaculo nudo, subgloboso v. elongato discreti v. aggregati et inter se connati, nudi v. perigonio integro, v. 2-3-4-fido; ovarium liberum, ovulo 1, erecto — atropo, parietali — amphitropo v. pendulo — anatropo, stylo laterali v. termin., bifido v. simpl., 1-∞ -stigmeo. *Nuculæ* c. induvio foliac. v. baccato, v. in sorosum baccatum connatæ. Semen erectum, parietale v. pendulum, exalbuminosum, testa coriacea, cotyledon. crassis carnosis, sæpe valde inæqualibus: — *Brosimum*, *Antiaris*, *Olmedia*, *Cecropia*, *Artocarpus*, *Trophis*....

FAM. 102. ULMACEÆ.

Arbores, frutic. foliis alternis, simpl. serratis, scabris, costatis, stipulis caducis v. O? *Flores* laterales, præcoces ≺, fasciculati v. glomerati, mono-diclini: perigonium O v. 3-4-5-8-fidum, persistens, androecco isomero, opposito v. stamina 15-18 e toro nudo; antheræ extrorsæ v. introrsæ, 2-4-loculär., dorsi-basifixæ. *Ovarium* liberum, diphyllum, 2-stigmeum, 1-2-loculare, ovulis 1-2, pendulis, anatropis, altero, si adest, vacuo, v. ovaria 15-18 gynopodiata et obliqua, stigmate adnato laterali, e toro nudo. *Nucula* v. *Samara* monosperma,

embryone amygdalino, exalbum., radic. supera: — *Zelkova* (*Selqua*), *Planera*, *Microptelea*, *Ulmus*, *Euptelea*.

## *Ordo III. Salicastra.*

Arbores, frutic. fol. integr. v. palmatis, stipulatis; flor. diclini amentacei, ovar. lib. diphyllum ≺, ovulis confertis, anatrop (v. atropis); fructus capsulares, parvi, raro 1-spermi; semina utplurim. exalbuminosa.

### FAM. 103. PLATANACEÆ.

Arbores, succo aqueo, foliis alternis, palmatis, stipulatis, gemmis latentibus. Amenta monoeca, in ramis diversis, globosa, receptaculo squamigero et antheris ∞, brachynemis, normalib. cum connexivo clavato-peltato, dense obsito, v. ovariis ∞ geminatis, basi pilosis, ovulis 1-2-pendulis superpositis, atropis, stylo sublobato. *Nuculæ* obconicæ, basi pilis prurientibus obsitæ, semine subcylindrico, pendulo, albumine carnoso, embr. axili, radicula cotyledonibus æquilonga, infera: — *Platanus*.

### FAM. 104. ALTINGIACEÆ (s. BALSAMIFLUÆ).

Arbores, cortice balsamifero, foliis alternis, integris v. lobatis, serratis, stipulis fugacibus. *Flores* monoeci, involucro 4-phyllo, caduco: amenta ♂ conica v. subglobosa, composita, antheris ∞, brachynemis, bilocularib. perischizis et squamulis intermixtis; ♀ globosa, squamigera, ovariis 2-locular., 2-stylis, ovulis centralib. ∞, amphitropis. Capsulæ squamis induratis induviatæ et rostratæ, inter se connatæ, bifolliculares; semina ovulis pauciora, peltata, album. parco, embryone recto, cotyledonib. foliaceis, radic. brevi, supera: — *Liquidambar*.

### FAM. 105. SALICACEÆ.

Arbores, frutices, fruticuli, foliis alternis, venosis, 1-7-nerviis, integris v. palmatis, integerrimis v. serratis, stipulatis.

*Flores* dioeci ≺, amentacei, acrocladi, unibracteati: ♂ urceolus (torus) stamina 2 v. plura, antheris normal. basifixis, gerens; ♀ torus et ovarium bivalve, uniloculare, ovulis ∞ anatropis, e placentis brevib. medivalvibus adscendentibus, stylis 2, 2-3-lobis. *Capsula* unilocul., bivalvis., polysperma; semina minuta, erecta, pilis longissimis involucrata (arillus?), embryone amygdalino, exalbuminoso: — *Salix*, *Populus*.

FAM. 106. BETULACEÆ.

Arbores frutic. foliis alternis, simpl., serrat. v. sublobatis, costatis, novell. stipulatis. *Amenta* monoeca, termin. v. lateralia, bracteis 2-3-floris: ♂ bractea, bracteolæ et sepala 1-4, antheris oppositis, brachynemis, basifixis, unilocularib. longitrorsum dehisc., v. 2-locular. perischizis; ♀ bracteæ 2-3-floræ et sepala 0 v. 4, demum basi ovarii adcreta, ovarium bilocul. 2-stigmeum, ovulis solitariis, demum anatropis, septo appensis. Strobilus bracteatus, nuculas monospermas v. caryopsides apteras v. alatas fovens; semen inversum exalbuminosum, cotyledones planiusculæ, radic. supera: — *Betula*, *Alnus*.

## *Ordo IV. Corylastra.*

Arbores frutic. fol. simpl. v. pinnatis, passim stipulatis; flor. diclini, amentac. sæpe perigoniati; ovaria perigonio minuto innata, 1-3-locul., solitar. v. conferta, ovulis solitar. v. gemin. anatrop. v. atropis. Nuces sæpius involucratæ; sem. exalbuminosa.

FAM. 107. CORYLACEÆ (Cupuliferae).

Arbores v. frutices, foliis alternis, costatis, integris, dentatis, pinnatifidis, pinnatis? stipulatis. *Flor.* diclini: ♂ amentacei, bracteis variis v. et perigonio 1-4-6-mero (raro duplici), 4 - ∞ - andro prædíti, antheris 1-2-locular., longitrorsum dehiscentibus; ♀ solitarii, fasciculati v. spicati, singuli v. plures, involucro foliaceo, squamoso v. setoso inclusi, perigonii adnati limbo minuto, ovario 2-3-loculari, schizo- v. synstylo,

ovulis solitariis v. geminis, anatropis, pendulis (v. primitus erectis). *Nuces* coriaceæ v. osseæ, abortu monospermæ, solitariæ v. 2, 3, carpomphalo passim lato, involucro (cupulæ) foliaceo v. indurato insidentes v. inclusæ. Semen pendul. exalbuminosum, testa membranacea, cotyledonib. ± — crassis, radic. brevi, supera: — *Ostrya*, *Carpinus*, *Corylus*, *Quercus*, *Lithocarpus*, *Fagus*, *Castanea*.

FAM. 108. MYRICACEÆ.

Frutic. v. arbusculæ, foliis sparsis integris, serratis v incisis, venulosis, glandulosis, stipulatis(?). *Flor.* diclini v. androgyni, amentacei: ♂ bracteæ 4-6-8-andræ, antheris bilocular. subextrorsis, basifixis, longitr. dehiscentibus; ♀ bracteæ et perigonia di-hexamera, basi ovarii adnata, ovulum 1, erectum, *atropum*, stigmata 2 subulata, stylus brevis. Nucula, perigonio adnato, sicco v. drupaceo induviata (amalthæa?), semine erecto, exalbum., testa tenui, embryone amygdalino, antitropo: — *Myrica* (*Comptonia*).

FAM. 109. JUGLANDACEÆ.

Arbores, passim resinosæ, foliis alternis, pinnatis, estipulatis. Flores diclini: ♂ amentacei, perigonio bracteato, 2-3-6-partito, irregulari, novello imbricato, 3-∞-andro, antheris brachynemis, bilocul., longitrorsum dehiscentibus. ♀ pauci terminales, aggregati v. racemosi, bracteati, calyce adnato, limbo 3-5-mero, minuto, quibusdam petalis nanis, alternis prædito, utplurimum deciduo, ovario diphyllo, kionide 2-4-ptera, ovulo 1, erecto, *atropo*, stylo brevi, bifido, fimbriato, discoideo v. 4-lobo, stigmatoso. *Amalthæa* drupacea, passim involucro adnato et increscente alata, v. nauco ruptili — 4-fido. Semen exalbuminosum, antitropum, cotyledonib. crassis, passim torulosis et bilobis, radicula brevi, supera, gemmula sæpe diphylla, pinnata: — *Carya*, *Juglans*, *Pterocarya*, *Engelhardtia*, *Platycarya*.

*Nota.* Lentiscaceæ s. Pistaceæ LINK, an separandæ a Cassuvieis et hic locandæ?

Sectio II. Synpetalae s. Corolliflorae *nob.* Flores plerumque completi et corolla synpetala, raro dialypetala.

## Classis IX. Epistephanæ.

Corolla synpetala epigyna, raro petala quasi disjuncta et ovarium semiliberum; androeceum sæpe symmerum et monocyclum v. oligantherum.

### *Ordo I. Dipsacastra s. Monospermæ.*

Flores plerumque aggregati, 1-2-clini, quandoque irregulares, ovulo 1 anatropo, achenia parva, raro baccata; albumen plerumque nullum; estipulatæ.

#### FAM. 110. LORANTHACEÆ.

Frutices parasitici, raro terrestres, ramis nodoso-articulatis et dichotomis ⊀, foliis oppositis v. alternis (verticill.), coriaceis, perenn., integerrimis, venulosis v. palmatinerviis, estipulatis, quibusd. abortivis v. O. *Flores* mono-diclini, minuti v. longissimi, cymosi, raro involucrati, perigonio O v. calycino (in diclinib.) aut duplici: calyx adnatus, petala 6, 8, 4, 3, discreta v. connata, novella valvata; stamina totidem antepetalina, filamentis liberis, connatis v. O, antheris normalibus, quibusdam unilocularib. transversim dehiscentib. v. multiporosis et sessilibus. *Ovarium* passim c. toro epigyno, simplex, ovulo 1 (∞?), pendulo, anatropo. *Achœnium* baccatum, embryone 1 v. ∞, in cavitate superficiliali albuminis carnosi, copiosi, radicula crassa, supera.

a. *Misodendreæ*, nudifloræ: — *Misodendron.*

b. *Visceæ*, apetalæ: — *Viscum*, *Arceuthobium*.. *Antidaphne.*

c. *Psittacantheæ*, synpetalæ: — *Dendrophthoë* Mart. *Loxanthera*, *Psittacanthus*, *Macrosolen*, *Tolypanthus*....

d. *Loranthe*æ, dialypetalæ: — *Loranthus, Dendropemon, Phthirusa, Struthianthus, Nuytsia*.... vid. Rchb. Repertor. herbarii 1841.

FAM. 111. DIPSACACEÆ.

Hbæ annuæ v. suffrutices, foliis oppositis, raro verticillatis, integris — bipinnatifidis, estipulatis. *Flores* monoclini in capitulis terminalibus, involucratis, passim radiatis, receptaculo nudo v. bracteolato, raro axillares, sessiles, aggregati: flori singulo calyculus persistens, calyx limbo supero, quibusdam papposo, corolla limbo 5-fido, sæpe irregulari, novello imbricativo, stamina 4-alterna, postico dificiente, duobus anticis interdum breviorib. v. anantheris, antheris normalibus. *Ovarium* simplex, tubo calycis omni v. saltem summo cohærens, stylo et stigmate simpl. v. bilobo, ovulo 1, pendulo, anatropo. *Achœnium* limbis calycis et involucelli coronatum; embryo in axi albuminis carnosi parci, radicula brevi supera.

a. *Morine*æ: cymis axillaribus, corollis ringentibus: — *Morina*.

b. *Scabiose*æ: capitula involucrata, corollis passim irregularibus: — *Dipsacus, Cephalaria, Knautia, Pterocephalus, Scabiosa*.

FAM. 112. CALYCERACEÆ.

Hbæ annuæ v. suffrut., foliis sparsis, integris v. pinnatifidis, estipulatis. *Capitula* involucrata receptaculo nudo, paleaceo v. alveolato, florib. omnibus monoclinis v. summis c. ovario sterili; calyces passim inter se connati, limbi superi lobis 5, sæpe inæqualibus; corolla e toro epigyno, conico, 5-glanduloso, regularis, infundibuliformis, 5-fida <, nervis mediis et 2 marginalibus, novella valvata. Stamina 5 alterna, quibusdam monadelpha, antheris normal. linearib., exappendiculatis, inferne coalitis. *Ovarium* simplex, stylo glaberrimo, superne incrassato, stigm. capitato et ovulo 1, pendulo, ana-

tropo. *Achenia* discreta v. conferruminata, limbo calycis passim aucto spinescente et corolla emarcida coronata, calyce crasso, a pericarpio facile solubili. Embryo in axi albuminis carnosi, subæquilongus, radicula supera longiori: — *Gamocarpha*, *Boopis*, *Calycera*, *Acicarpha*.

FAM. 115. SYNGENETICÆ: (Compositae, Synantherae).

Hbæ annuæ, suffrutices — arbores, quædam lactescentes v. scand., foliis sparsis v. oppositis et verticill., estipulatis, forma omnivariis. *Capitula* (centripeta) homo- v. heterogama, passim heteranthia, tubuli- liguli- labiatiflora, monœca, dioeca v. polygama, poly-monantha, in corymbos v. glomerulos involucratos centrifugos disposita, involucro vario, receptaculo plano v. elongato, nudo, bracteolato (paleato), foveolato v. fimbrillifero (involucellis trichomorphis). Calyx adnatus, limbo obsoleto v. polymorpho (et papposo). Corolla e toro epigyno, in cyathulum producto, regularis, 5-fida, raro 4-3-2-fida, nervis 5 suturalibus, bifurcis et lobos marginantibus, quibusdam 5 medianis, accessoriis, — v. irregularis, in ligulam brevem v. longam, 3-5-dentatam producta — v. bilabiata — 2 et 3 - 1 et 4-fida. *Stamina* 5 raro 4, alterna, filamentis liberis v. monadelphis, superne articulatis, antheris normalib. lincarib. connatis, raro liberis, passim c. appendice terminali et caudiculis geminis basilaribus. *Ovarium* simplex, stylo bifido, ovulo 1, erecto, anatropo. *Achœnium* calvum v. papposum, tubo calycis quandoque producto rostratum, semine erecto exalbuminoso, testa plerumque c. endocarpio cohærente, tegmine crassiusculo.

Familia maxima, ultra 9000 species colligens, in tribus 8 (9, plures) et sectiones multiplices ab auctoribus divisa, a Cassinio, Lessingio, Decandollio aliisque solerter scrutata, sed denuo examinanda!.. Characteres tribuum, a styli ramis (hemistylia *nob.*), pilis et seriebus glandular. stigmaticarum (adenostichia *n.*) petiti, nimis vagi v. inexacte definiti nec usui practico apti nobis videntur. Nomina tribuum con-

formia substituendo, characteres illarum mancos et synopsin generum succinctam adjungimus.

Trib. I. Cichoriariae s. Cichoraceae: herbæ lactescentes, raro frutices, capitula homogama: corollæ omnes ligulatæ, 5-dentatæ; hemistylia + — longa, obtusiuscula, æqualiter pubescentia, adenostichiis ante medios ramos desinentibus, nec apice confluentibus. Species 873 DC.

1. *Hieracieæ:* — *Mulgedium*, *Troximon*, *Dubyæa*, *Andryala*, *Nabalus*, *Hieracium*....

2. *Lactuceæ:* — *Prenanthes*, *Sonchus*, *Picridium*, *Intybellia*, *Pterotheca*, *Zacintha*, *Brachyramphus*, *Phœnixopus*, *Crepis*, *Barkhausia*, *Macrorhynchus*, *Taraxacum*, *Chondrilla*, *Lactuca*....

3. *Scorzonereæ:* — *Helminthia*, *Picris*, *Scorzonera*, *Urospermum*, *Tragopogon*, *Geropogon*, *Podospermum*, *Oporinia*, *Apargia*, *Leontodon*, *Kalbfussia*, *Thrincia*.

4. *Rodigieæ:* — *Rodigia*.

5. *Hypochœrideæ:* — *Robertia*, *Seriola*, *Achyrophorus*, *Hypochœris*.

6. *Cichorieæ* s. *Hyoserideæ:* — *Cynthia*, *Microseris*, *Krigia*, *Tolpis*, *Cichorium*, *Catananche*, *Aposeris*, *Hedypnois*, *Hyoseris*, *Arnoseris*.

7. *Lampsaneæ:* — *Kölpinia*, *Rhagadiolus*, *Lampsana*.

8. *Scolymeæ:* — *Diplostemma*, *Scolymus*.

Trib. II. Carduariae s. Cynareae: herbaceæ, passim spinescentes, rarius frutescentes v. lactescentes. Capitula 1-∞-flora, homo- v. heterogama, receptaculo nudo v. fimbrillifero; corollæ tubulosæ, passim difformes, stylus superne tumidus et pilosus, ramis brevib. < connatis v. liberis, extus puberulis, adenostichiis in apice confluenlibus. Spec. 1200. DC.

1. *Centaurieæ* (et Carthameæ): — *Carduncellus*, *Onobroma*, *Carthamus*, *Kentrophyllum*, *Cnicus*, *Centaurea*, *Microlonchus*, *Crupina*, *Zoegea*, *Chryseis* (*Amberboa*)...

2. *Serratuleæ:* — *Acroptilon*, *Rhaponticum*, *Leuzea*, *Jurinea*, *Serratula*....

3. *Cirsieæ* (Carduineæ et Silybeæ DC.): — *Lappa*, *Echenais*, *Notobasis*, *Chamæpeuce*, *Erythrolæna*, *Cirsium*, *Picnomon*, *Carduus*, *Cynara*, *Onopordon*; — *Silybum*, *Galactites*....

4. *Carlineæ* DC.: — *Cousinia*, *Atractylis*, *Carlina*, *Stoehelina*, *Arctium*, *Aplotaxis*, *Saussurea*....

5. *Xeranthemeæ* Less.: — *Chardinia*, *Xeranthemum*...

6. *Cardopateæ* Less.: — *Cardopatium*.

7. *Echinopsideæ* Lessing: — *Echinops*.

8. *Arctotideæ:* — *Gazania*, *Berkheya*, *Dideta*, *Gorteria*, *Cullumia*, *Cryptostemma*, *Arctotheca*, *Venidium*, *Arctotis*.

Trib. III. Pyrethrariae s. Senecionideae: herbaceæ v. frutesc. et arbusculæ, sæpe acres v. aromaticæ, fol. alt. v. opposit.. Capitula sæpe radiata: hemistylia +— — longa, truncata, acrotricha et passim appendice crassiori terminata, adenostichiis latiusculis. Spec. 3,263 DC.

1. Calendulinæ: capit. heterogama: flor. medii steriles, stylo O v. imperfecto; recept. nud. alveolatum: — *Ruckeria*, *Othonna*; — *Osteospermum*; — *Calendula*, *Tripteris*....

2. Pyrethrinæ (Anthemidcæ): capitula heterogama <, antheræ ecaudatæ; hemistylia truncata acrotricha; papp. O, coronalis v. squamellosus; — alternifoliæ et gerontogeæ plerumque.

a. *Chrysanthemeæ:* — *Dimorphotheca*, *Chrysanthemum*, *Pyrethrum*, *Matricaria*, *Leucanthemum*, *Leucopsidium*, *Gamolepis*...

b. *Anthemideæ:* — *Lasiospermum*, *Santolina*, *Diotis*, *Achillea*, *Ptarmica*, *Cladanthus*, *Ormenis*, *Anacyclus*, *Maruta*, *Anthemis*, *Oederia*.

c. *Cotuleæ:* — *Lapeyrousia*, *Cotula*, *Cenia*.

d. *Athanasieæ:* — *Lonas, Gonospermum, Athanasia.*

e. *Artemisieæ:* — *Artemisia, Tanacetum, Plagius, Chlamydophora, Myriogyne.*

f. *Hippieæ:* — *Leptinella, Soliva, Hippia...*

g. *Eriocephaleæ:* — *Eriocephalus.*

3. Gnaphaliinæ: capitula homo- v. heterogama, raro uniflora v. radiata; antheræ caudatæ; pappus pilos. v. setaceus (et O); folia alterna <; — (Angiantheæ, Cassinieæ, Gnaphalieæ, Seriphieæ, Antennarieæ, Leysseræ et Relhanieæ): — *Angianthus, Craspedia; — Ammobium, Ixodia, Cassinia; — Humea, Rhodanthe, Podotheca, Podolepis, Ozothamnus, Helichrysum, Helipterum, Achyrocline, Gnaphalium, Cladochæta, Filago, Erythropogon; — Stoebe, Seriphium; — Phœnocoma, Antennaria, Leontopodium; — Leyssera; — Carpesium, Relhania, Eclopes, Rhynchopsidium, Osmites....*

4. Senecioninæ: — capit. plerumque radiata et epaleata; antheræ ecaud., papp. pilos. v. setaceus, raro O; fol. alterna < (Neurolæneæ, Erechtiteæ, Senecioneæ et Balbisieæ): — *Neurolæna; — Erechtites, Cremocephalum; — Emilia, Cineraria, Senecillis, Ligularia, Arnica, Aronicum, Doronicum, Cacalia, Kleinia, Senecio, Bedfordia, Euryops; — Balbisia....*

5. Heleninæ — capit. heterogama <, passim paleifera; hemistylia truncata v. appendiculata; pappus multipaleaceus; folia rarius opposita; plerumque americanæ; (Madieæ, Sphenogyneæ, Galinsogeæ, Helenieæ et Gaillardieæ): — *Tolpatia (Oxyura* DC.*), Callichroa, Madaria, Madia; — Ursinia, Sphenogyne; — Tridax, Sogalgina, Galinsoga, Calea, Meyeria; — Lasthenia, Callichroa, Baeria, Helenium, Burrielia, Cephalophora, Hymenopappus, Bahia, Florestina, Schkuhria, Achyropappus; — Gaillardia....*

6. Tagetinæ: — capit. heterogama <, sæpius radiata (quibusd. oligantha), raro paleifera; achenia elongato-clavata, pappo aristac., squamac., setaceo v. O. Americanæ, fol. sæpius

oppositis. (Porophylleæ, Tageteæ et Flaverieæ?): — *Porophyllum*; — *Tagetes*, *Dysodia*, *Adenophyllum*, *Syncephalantha*; — *Broteroa*, *Flaveria*....

7. Helianthinæ: capit. heterogama ☌, radiis neutris v. fœmin., anth. ecaud., hemistylia acrotricha v. appendiculata; papp. O, coronal., aristac. v. paleaceus; folia sæpius opposita.

*a. Verbesineæ:*— *Narvalina*, *Heterospermum*, *Synedrella*, *Sanvitalia*, *Ximenesia*, *Spilanthes*, *Verbesina*, *Perymenium*.

b. *Bidentideæ:* — *Cosmos*, *Bidens*.

c. *Helianthеæ nob.*: — *Helianthus*, *Tithonia*, *Harpalium*, *Leighia*, *Viguiera*, *Actinomeris*, *Coreopsis*.

d. *Rudbeckieæ:*— *Calliopsis*, *Chrysostemma*, *Encelia*, *Sclerocarpus*, *Anomostephium*, *Obeliscaria*, *Dracopis*, *Rudbeckia*, *Echinacea*.

e. *Heliopsideæ:* — *Chiliophyllum*, *Zaluzania*, *Ferdinanda*, *Guizotia*, *Heliopsis*, *Pascalia*, *Melanthera*, *Jägeria*, *Wedelia*, *Zinnia*....

8. Melampodinæ: fl. diclini, receptac. plerumque paleatum; anth. ecaud., papp. O, aristac. v. coronalis; fol. sæpius opposita; quædam arborescentes. (Parthenieæ, Iveæ, Ambrosieæ, Melampodieæ, Silphieæ, Millerieæ et Euxenieæ): — *Parthenium*; — *Iva*; — *Ambrosia*, *Franseria*, *Xanthium*; — *Melampodium*; — *Polymnia*, *Silphium*; — *Baltimora* (*Fougerouxia*), *Clibadium*, *Milleria*, *Elvira*; — *Euxenia*....

Trib. IV. Asterariae s. Asteroideae. Hbæ v. frutic. et arbor.; capitula sæpe radiata, rarius homogama v. dioeca; hemistylia fl. ☿ sæpius complanata, acuminata, convergentia et hirtella, adenostichiis prominulis, angustis.

1. Ecliptinæ: capit. radiata, recept. paleatum, antheræ ecaud., papp. O v. aristaceus; folia opposita: — *Borrichia*, *Eclipta*, *Blainvillea*, *Salmia*, *Dahlia* (*Georgina*), *Siegesbeckia*....

2. Inulinæ: capit. homochroma et heterogama <, sæpius radiata, anth. caudatæ <, recept. nud. v. paleat., papp. setac. v. paleac., fol. alterna.

a. *Buphthalmeæ* — differunt < recept. paleato, pappo coroniformi, lacero v. piloso-dentato: ┬┬ *Pallenis*, *Asteriscus*, *Telekia*, *Buphthalmum*....

b. *Inuleæ:* — *Cæsulia;* — *Amblyocarpum*, *Pulicaria*, *Jasonia*, *Francoeuria*, *Inula*....

3. Conyzinæ *nob.*: capit. eradiata, heterogama v. mon-dioeca; folia alterna.

a. *Pluchieæ:* heterogamæ v. monoecæ, antheris caudatis: — *Micropus*, *Evax*, *Pluchea*...

b. *Tarchonantheæ:* — dioecæ, antheris ecaud.: — *Tarchonanthus*, *Brachylæna.*

c. *Baccharideæ:* dioecae, anth. ecaud.: *Baccharis.*

d. *Conyzeæ:* — heterogamæ, monoecæ; anth. ecaud.: — *Phagnalon*, *Conyza*, *Karelinia;* — *Grangea*, *Dichrocephala;* — *Sphæranthus.*

4. Asterinæ: capit. sæpius heterogama et radiata, hetero- v. homochroma, antheræ ecaud., folia alterna <.

a. *Solenogyneæ*: — *Solenogyna.*

b. *Chrysocomeæ:* — *Pteronia*, *Chrysocoma*, *Linosyris*, *Haplopappus*, *Solidago;* — *Chrysopsis;* — *Neja*, *Psiadia*; — *Heterotheca*; — *Grindelia*, *Achyris;* — *Gymnosperma*....

c. *Astereæ:* — *Garuleum*, *Myriactis*, *Brachycome*, *Bellis;* — *Bellium;* — *Boltonia*, *Charieis*, *Stenactis;* — *Erigeron*, *Polyactidium;* — *Diplopappus*, *Callistephus*, *Diplostephium*, *Olearia;* — *Eurybia*, *Biotia*, *Sericocarpus*, *Callimeris*, *Turczaninowia*, *Galatella*, *Tripolium*, *Aster*, *Bellidiastrum*, *Agathea*, *Munychia*, *Felicia*....

d. *Amelleæ:* — *Heterothalamus;* — *Amellus*...

Trib. V. Steviariae s. Eupatoriaceae. Hbæ, frut. passim scand. et arbusculæ, plerumque fol. opposit. et flor. cyani-

cis, raro xanthicis. Capitula tubuliflora, homogama <, raro radiata, antheræ ecaud., hemistylia fl. ♀ longa, teretia v. clavata, extus papillosa <, adenostichiis ante medios ramos desinentibus.

1. Tussilaginæ — heterogamæ v. dioecæ (Farfareæ et Petasiteæ): *Tussilago;* — *Petasites*, *Nardosmia*, *Homogyne.*

2. Eupatorinæ — homogamæ (Adenostyleæ, Agerateæ et Alomieæ): — *Adenostyles*, *Mikania*, *Eupatorium*, *Critonia*, *Liatris;* — *Stevia*, *Ageratum*, *Coelestina;* — *Piqueria*, *Alomia* ....

Trib. VI. Vernoniariae s. Vernoniaceae. Hbæ v. frut et arbores; capitula tubuliflora, homogama ≺, cyanica, raro xanthica, radiata, dioeca v. labiatiflora, receptac. alveol., fimbrillifero v. nudo <; hemistylia longa, pilosula, subulata, rarius brevia et truncata, adenostichiis ante medios ramos desinentibus.

1. Vernoniinæ — homogamæ, eradiatæ (Vernonieæ, Elephanthopeæ, Rolandreæ et Bojerieæ): — *Sparganophorus, Ethulia; Vernonia, Centratherum (Amphérephis); Albertinia;* — *Elephanthopus;* — *Gundelia*, *Rolandra*, *Lagascea;* — *Bojeria*....

2. Pectidinæ — heterogamæ, radiatæ (Liabeæ et Pectideæ): — *Liabum*, *Pectis.*

Trib. VII. Nassaviariae s. Nassauviaceae. Hbæ v. frutic. americani, exiles v. majores; capitula labiatiflora, homogama et radiatiformia <, antheræ caudatæ; hemistylia longiuscula, obtusa, acrotricha (= Senecioni?) Spec. 125 DC.

Polyachyrideae, Nassavieæ et Trixideæ: — *Polyachyrus;* — *Nassavia, Triptilion, Panargyrum;* — *Jungia, Leuceria, Moscharia, Dumerilia, Trixis*....

Trib. VIII. Mutisiariae s. Mutisiaceae. Herbaceæ v. arboresc. et scandentes, plerumque americanæ; capitula 1-∞-flora, homo- v. heterogama, florib. plerumque bilabiat.

et crassis; antheræ sæpius caudatæ, stylus superne subnodosus, ramis brev. crassiuscul. obtusis, superne puberulis ⊰. Spec. 216 DC.

Facelideæ, Lerieæ, Mutisieæ et Barnadesieæ: — *Facelis;* — *Leria, Chaptalia;* — *Anandria, Perdicium, Gerbera, Miripnois, Onoseris, Mutisia, Seris;* — *Barnadesia*....

## *Ordo II. Rubiastra s. Cymoscæ.*

Flores cymosi — oppositi, raro aggreg. v. irregulares; ovar. 2-∞-loculare, ovulis solitar. v. congestis; amalthæa 1-2-∞-sperma, passim baccata, semina plerumque albuminosa. Folia oppos. <, plerumque simpl. et stipulata.

### FAM. 114. VALERIANACEÆ.

Hbæ annuæ, suffrutices, raro volubiles, foliis imis et caulinis oppositis, integris — pinnatisectis, estipulatis. *Flores* mono-diclini, cymosi, bracteati, raro solitarii v. c. calyculo duplici: calycis adnati limbus 3-5-fidus v. multisetosus et novell. circinatus; corolla e toro epigyno, tubo basi æquali v. calcarato, limbo 5-4-3-fido, ⊹ — regulari, nov. imbricato; stamina innata, alterna, exserta, 3, 4, 1, raro 5, antheris liberis, normalibus. *Ovarium* 3-phyllum, loculis duobus vacuis, sæpe minimis, tertio fertili, stylo 2-3-stigmeo, ovulo 1, pendulo, anatropo. *Achænium* simpl. v. loculis 1-2 vacuis auctum, albumen O, tegmen quibusdam tumidum, cotyledones radiculam excedentes: — *Triplostegia, Betckea;* — *Valeriana, Centranthus;* — *Plectritis, Fedia, Astrephia, Valerianella, Dufresnia;* — *Nardostachys, Patrinia.*

### FAM. 115. LONICERACEÆ s. CAPRIFOLIACEÆ.

Frutices v. fruticuli, quædam volubiles, foliis oppositis, integris v. palmatis, pinnatis, petiolis quarundam glandulosis v. basi appendiculatis. *Flores* monoclini, cymosi, quibusdam

gemini connati; calycis adnati limbus 5-merus v. obsoletus, deciduus; corolla tubulosa, +- — regularis, v. rotata, 5-mera, novella imbricata; stamina alterna 5, raro 4, antheris normalibus. *Ovarium* 2-5-loculare, stylo longo v. subnullo, 2-5-stigmeo, ovulis solitariis, pendulis, anatropis, v. plurimis et passim abortivis. *Amalthœa* baccata v. coriacea, 1-5-locularis, 1-∞-sperma; testa dura, raphe dorsalis v. ventralis, albumen carnosum, embryo brevissim. v. subæquilongus.

a. *Lonicereœ:* corolla tubulosa, stylus filiformis, raphe dorsalis: — *Linnœa*, *Abelia*, *Symphoricarpos*, *Diervilla*, *Lonicera*, *Triosteum*..

b. *Sambuceœ:* corolla rotata, regularis, stigmata 3 sessilia, raphe ventralis: — *Viburnum*, *Sambucus*.

### FAM. 116. RUBIACEÆ.

Hbæ frut. arbores, caule ramisque passim tetragonis, nodoso-articulatis, foliis oppositis, integris et integerrimis, bistipulatis; stipularum morphosis varia, in quibusdam folia verticillata simulans. *Flores* monoclini, regulares, cymoso-paniculati, glomerati, v. mediantibus calycibus connati, raro diclini v. irregulares: calycis limbus superus v. semisuperus, 2-6-merus, integer v. obsoletus; corolla epigyna 4-6-fida, novella valvata, raro contorto-imbricata. Stamina tubo corollæ innata, isomera, alterna, raro pauciora v. monadelpha v. synanthera, antheris normalibus. *Ovarium* 2-∞-phyllum, 1-2-∞-loculare, toro epigyno carnoso, vario v. obsoleto, stylo 2-∞-fido, ovulis ana-amphitropis, erectis, pendulis v. peltatis, solitariis s. confertis. *Amalthœa* sicca, baccata v. drupacea, loculis 1-∞-spermis; semina plano-convexa v. compressa, alata, albumine +- — duro, raro subnullo, embryone axili, longo v. brevissimo, cotyledonib. crassis v. foliaceis, radicula sæpius infera.

A. Coffeaceae: ovula et semina in loculis solitaria, raro gemina.

a. *Stellatæ* s. *Rubieæ:* hbæ, suffrut. foliis verticillatis e morphosi stipularum, ovar. bilocul., ovula solitaria, stigmata capitata, album. corneum : — *Vaillantia*, *Callipeltis*, *Galium*, *Rubia*, *Crucianella*, *Asperula*, *Sherardia.*

b. *Opercularieæ:* hbæ, suffrut. foliis opposit., bistipulatis, cymis synanthis, involucratis, calycibus in conum et discum epigynum communem concretis, corollis 3-5-fidis, 1-5-andris; stigmata 2 elongata, fruct. monospermi: *Pomax*, *Opercularia.*

c. *Anthospermeæ:* frutic. v. hbæ, foliis opposit. v. verticillatis; flor. mono-diclini, stigm. 2 elongata, achænium bipartibile dispermum : — *Coprosma*, *Phyllis*, *Anthospermum*...

d. *Spermacoceæ:* frutic. hbæ, foliis oppositis, stipulis passim multisetis; stigmata 2 brevia, amalthæa sicca v. subcarnosa, 2-3-4-sperma : — *Borreria*, *Spermacoce*, *Diodia*, *Richardsonia*, *Mitracarpum*, *Knoxia* ... *Cephalanthus; Ernodea*, *Hydrophilax*, *Putoria*, *Serissa* ...

e. *Psychotrieæ:* frut. arbores (hbæ), stipulis integris<, amalthæa baccata, nuculis 2 plano-convexis, seminib. intus unisulcatis, albumine corneo : — *Geophila*, *Cephaëlis*... *Psychotria*, *Coffea*, *Faramea*, *Pavetta*, *Ixora*, *Chiococca*, *Declieuxia*, *Canthium* ....

f. *Pæderieæ:* frutices passim volubiles; amalthæa subcarnosa, carpellis 2, a calyce solutis, monospermis, ex axi filiformi pendulis, albumine O v. parco carnoso: — *Pæderia*, *Lecontea*, *Lygodysodea.*

g. *Guettardeæ:* frut. arbores, amalthæa drupacea, 2-10-loculari, semin. solitariis, teretibus, albumine carnoso: — *Morinda;* — *Hydnophytum*, *Nertera*, *Mephitidia*, *Vangueria*, *Guettarda*, *Pyrostria*, *Erithalis*, *Nonatelia*....

h. *Cordiereæ:* frutices, amalthæis baccatis, 2-∞-locularibus, loculis 1-2-spermis : *Cordiera*, *Tricalysia?*

B. Gardeniaceae *nob.* (Cinchonaceæ). Hbæ, frutices, arbores, foliis oppositis, stipulatis, raro verticillatis, exacte formas Coffeacear. repetentes, sed loculis ovarii 2-6, multiovu-

latis, fructu polyspermo et corollis sæpe majoribus insignes ; an familia distincta?

a. *Cinchoneæ:* hbæ annuæ, — arbores, amalthea bifolliculari, septi- v. loculicida, stipulis integris v. multisetis: — *Polypremum*, *Hedyotis*... *Ophiorrhiza*, *Virecta*, *Wendlandia*, *Rondeletia*, *Portlandia*, *Condamincа*... *Calycophyllum*, *Bowardia*, *Manettia*, *Exostemma*, *Hymenodictyon*, *Remijia*, *Cinchona*, *Cosmibuena*, *Hillia*.... *Nauclea*.

b. *Gardenieæ:* Arb. frut., raro hbæ, amalthæa coriacea v. carnosa, biloculari, indehiscente, polysperma: — *Sarcocephalus*, *Zuccarinia*... *Catesbæa*, *Coccocypselum*, *Stylocoryne*, *Bertiera*, *Randia*, *Gardenia*, *Genipa*, *Mussænda*, *Burchellia*....

c. *Isertieæ:* hbæ – arbores, amalthæa 2-6-pyrena, pyrenis polyspermis : — *Metabolus*, *Gonzalea*, *Isertia*..

d. *Hamelieæ:* frut. arbores, amalthæa 4-5-locularis, folliculis polyspermis: — *Polyphragmon*, *Hamelia*, *Sabicea*....

## *Ordo III. Campanulastra.*

Flores monoclini, cymoso-racemosi, sæpe irregulares (obliqui); amalthæa 1-10-locularis; sem. albuminosa, plerumque minuta et conferta ; folia estipulata, simpl., raro opposita; plures lactescentes.

### FAM. 87. STYLIDIACEÆ.

Hbæ, suffrutices, foliis sparsis, verticillatis v. imis, integris, estipulatis. Flores monoclini, irregulares, spicati, racemosi v. solitarii, terminales, raro axillares, passim tribracteati: calycis adnati tubus passim supra ovarium productus, limbus bilabiatus $(\frac{2}{3})$, corolla epigyna bilabiata $(\frac{4}{1})$, lobo antico dissimili, quibusdam articulato et irritabili, fauce glandulosa v. denticulata, tubo brevissimo ; perigonium utrumque novell. imbricatum, raro regulare, 6-merum. *Gynostemium* continuum v. cum flexura duplici, inferiori irritabili; antheræ 2, stigmati obtuso v. bifido incumbentes, simpl. v. didymæ, loculis de-

mum divaricatis, longitrorsum dehiscentibus, polliniis globosis v. angulatis. *Ovarium* bi⁼ v. semibiloculare, breve v. longum, placentis centralibus, labiis calycinis parallelis, ovulis ∞ adscend. anatropis. *Amalthæa* bilocularis, loculicida v. loculo altero effoeto v. septo incompleto unilocularis. Semina ∞, minima, subglobosa, albumen carnoso-oleosum; embryo minimus indivisus? — *Stylidium*, *Levenhookia*, *Forstera*.

FAM. 118. GOODENIACEÆ.

Hbæ — frutices, succo aqueo, quædam volubiles v. scapigeræ et pube simpl., glandulosa v. stellata, foliis sparsis, integris v. lobatis, estipulatis. *Flores* monoclini, irregulares, axillar. v. terminales: calyx adnatus, limbo obsoleto v. 5-fido, v. liber 3-5-partitus; corolla epigyna v. fere hypogyna et ovario adnata, tubo postice — rarius antice fisso, limbo 5-mero, 1-2-labiato, novello induplicativo. *Stamina* 5, a corolla et stylo libera, alterna, antheris normalib., quibusdam subcoalitis, polliniis simpl. v. quaternatis. *Ovarium* perigonio v. soli corollæ innatum, diphyllum, 1-2-4-loculare, *ovulis* ∞-1, erectis, anatropis, stylo simpl. v. 2-3-fido, toro tenuissimo in stigmatis indusium cyathiforme, bilobum v. obsoletum producto. *Amalthæa* bifollicularis, 2-4-valvis, polysperma v. drupacea; sem. erecta, quibusdam alata; embryo axilis, albumini carnoso subæquilongus, passim phyllolobus: — *Cyphia;* — *Goodenia*, *Euthales*, *Velleja*, *Leschenaultia*.... Spec. 90. DC.

b. *Scævoleæ* — differunt ovario 1-2-4-ovulato et amalthæa nucamentacea v. drupacea, 1-4-sperma: — *Dampiera*, *Diaspasis*, *Scævola*. Spec. 75. DC.

FAM. 119. LOBELIACEÆ.

Hbæ-frutic. arbusculæ, plures lactescentes, foliis sparsis, integris v. pinnatifidis, estipulatis. *Flores* monoclini et irregulares <, racemosi, pedicellis sub anthesi passim tortis: calycis +- — adnati limbus 5-merus; corolla 5-mera, alter-

nans, plerumque irregularis, novella subvalvata, tubo antice +— — fisso, 1-2-labiata vel petalis 2 anticis (torsione pedicelli posticis) distinctis, tribus vero posticis inter se connatis. *Stamina* 5 interpetalina e toro epigyno v. subperigyno, filamentis superne et antheris connatis, his introrsis, bilocularib., apice et basi passim appendiculatis; polliniis ellipsoideis. *Ovarium* +— — innatum, 1-2-3-phyllum, 1-2-3-loculare, placentis centralibus v. septa incompleta marginantibus, ovulis ∞, horizontalibus <, anatropis; stylus tubulo antherarum inclusus, stigmate bilobo < c. annulo piloso. *Amalthœa* integra, loculicida v. operculata, quibusdam carnosa; semina ∞, glabra, scrobiculata v. alata, albumine carnoso, embryone axili, subæquilongo:

a. *Lysipomeœ:* herbæ, ovario uniloculari, amalthæa operculata: — *Lysipoma.*

b. *Clintonieœ:* hbæ, placentis 2 parietalibus; amalthaea 3-valvi, valvis 2 medio seminiferis, tertia sterili: — *Clintonia*, *Grammatotheca.*

c. *Lobelieœ:* herbae — arbusculae; ovario 2-3-loculari, amalth. loculicida: — *Monopsis*, *Isolobus*, *Dobrowskya*, *Lobelia*, *Tupa*, *Siphocampylus*, *Laurentia*, *Isotoma*....

d. *Clermontieœ:* hbae – arbores, amalth. biloculari integra, sicca v. carnosa: — *Pratia*, *Clermontia*, *Delissea*, *Centropogon*...

### FAM. 120. CAMPANULACEAE.

Hbæ sæpe lactescentes et suffrutices, foliis estipulatis, sæpius dentatis, sparsis, rarius oppositis. *Flores* monoclini, regulares <, axillar. v. terminales, solitarii, cymoso – racemosi, spicati v. glomerati et involucrati: calyx +— — adnatus, 5-3-6-8-10-merus; corolla alternans, campanulata v. tubulosa, novella plicato-valvata. *Stamina* 5-5-10, alterna, e toro epigyno, annulari v. styli basin vaginante, a tubo libera <, filam. basi passim membranaceis, antheris liberis v. connatis, normalibus,

in alabastro dehiscentibus, polliniis sphæricis, papillosis. *Ovarium* 2-10-phyllum, 1-2-3-5-10-loculare: loculi, si isomeri, sepalis oppositi v. alterni, ovulis ∞ anatropis, horizontalib. ⊰ e placentis axilibus, — v. 4-basilaribus; stylus ⊣ — longus, pilis collectoribus hirtus et sæpe clavatus, apice 2-10-fidus, raro capitatus. *Amalthæa* coronata, capsularis, acromphalo v. lateraliter ⊣ — perfecte loculicida v. porosa; semina minuta, ∞< cllipsoid. v. angulata, glabra <, albumine carnoso, embr. recto, subæquilongo, cotyledonib. brevissimis.

a. *Pongatieæ:* hbæ ann. glabræ, micranthæ, antheris 5 globosis, sessilib. ad sinus corollæ, ovario 2-locul. brachystylo, amalthæa operculata, placentis 2 fungosis, ∞-spermis: — *Sphenoclea.*

b. *Mercиereæ*: corollis elongatis gracillimis, ovario 2-phyllo, uniloculari, ovulis 4 e dissepimento basilari brevissimo: — *Merciera.*

c. *Wahlenbergieæ:* amalthæa ∞-sperma, acromphalo dehiscente, pedicelli post anthesin erecti; in hemisphærio australi frequentiores: — *Jasione; Lightfootia, Codonopsis, Canarina, Platycodon; Microcodon, Wahlenbergia; Prismatocarpus, Roëlla....*

d. *Campanuleæ:* amalthæa ∞-sperma, lateraliter dehiscens; omnes e hæmisph. boreali: — *Phyteuma, Michauxia, Campanula, Specularia, Trachelium, Adenophora, Symphyandra, Musschia....*

## *Ordo IV. Vacciniastra.*

Flor. mono-diclini, regulares; amalthæa 1-10-locular., sæpius baccata et maxima ⊰; sem. plerumque conferta, ultimis exalbuminosa; fol. estipul. raro opposita, integra v. divisa; plures scandentes. (Bryonia, Symplocos et Vaccinium fructu consimiles).

FAM. 121. VACCINIACEÆ.

Frutices majores v. tenelli, succo aqueo, foliis sparsis, integerr. dentatis, passim coriaccis et perennibus. *Flores* monoclini, regulares, solitarii v. racemosi: calyx adnatus, 4-5-6-merus; corolla alternans, decidua, tubulosa, urceolata, campanulata v. rotata, lobis 4 - 6, novell. imbricatis. Stamina dupla e toro epigyno, antheris subbasifixis, passim elongatis, bicornibus et biporosis. *Ovarium* 4-10-loculare, synstylum, placentis axilibus, poly-monospermis. Amalthæa baccata v. drupacea, coriacea, alata, loculis 1 - ∞ - spermis, raro fructus siccus, liber et loculicide 3-valvis; semina testa lævi v. rugosa, embryone axili, albumini carnoso subæquilongo; (affinitas quædam c. Ericaceis): — *Argophyllum? Anthopterus; Sphyrospermum*, *Oxycoccus*, *Vaccinium*, *Thibaudia*, *Gaylusacia*, *Agapetes*, *Ceratostemma*.... Spec. notæ 180 DC. Prodr.

FAM. 122. HALESIACEÆ. nob.

Frutices v. arbores Americæ, Africæ, Asiæ, foliis sparsis integerrim. v. dentatis, estipulatis, raro oppositis et perennibus. *Flores* monoclini< axillar., lateral. et terminales, solitarii, cymosi v. thyrsoidei: calyx -+- — adnatus, 4-5-6-merus, quibusdam imbricato-bracteolatus; corolla campanulata, 4-5-6-loba v. rotata, parva et parapetalis aucta, novella imbricata<. Stam. 5, 8, 16, ∞, e corolla ima, basi -+- — connata, antheris linearib. v. ovalibus. *Ovarium* innatum, 1-5-loculare, synstylum, ovulis anatropis, solitar. pendul. v. confertis et superiorib. quandoque erectis. *Amalthæa* baccata, drupacea v. follicularis; semina solitar. v. ∞, albumine carnoso, embryone minimo, v. æquilongo, cotyledonib. foliac. v. brevissimis.

a. *Halesieæ*: flores 4-5-meri, stamina 2-3-pla, antheris oblongis; ovar. 4-5-locul., ovulis pend. et erectis; embryone æquilongo, phyllolobo: — *Halesia*, *Pterostyrax*.

b. *Symplocæ:* flores parvi< axill. solitarii, glomerati v. corymbosi, 5-6-meri, quibusdam c. parastemonibus et im-

bricato-bracteolati; stam. 5, alterna v. opposita, v. 2-3-∞-pla, antheris ovatis; ovarium 2-3-5-loculare, loculis 1-2-4-ovulatis; amalthæa drupacea, putamine 1-5-spermo, embr. minimo v. cylindrico brachylobo: — *Schöpfia*, *Liriosma*, *Morelosia*, *Symplocos*.

c. *Columellieæ:* arbor. frutic. amari, americani, foliis oppositis perenn., florib. cymosis, luteis, calyce et corolla 5-meris, androeceo diadelpho, antheris 5 (6?), connectiva 2 lobata marginantibus, gyrosis, ovario biloculari, placentis 2 axilibus ∞-ovulatis; amalthæa dura, folliculis 2 exsertis, seminib. obovatis, ∞, embryone albuminoso Halesiæ: — *Columellia*.

*Nota.* Tribus familiæ novæ fusius adumbravimus, non prætervisa affinitate partiali ejus c. Styrace et Diospyreis. Columelliæ enigmaticæ habitu ad Campanulam fastigiatam, fructu ad Wahlenbergiam, amaritie et antheris ad Cucurbitaceas, foliis perennib. ad Vaccinia, seminib. ab Colocynthidem et Halesiam accedunt; hinc notas ordinum communes colligunt.

### FAM. 123. NAPOLEONACEÆ.

Frut. v. arbores tropicæ, fol. altern. integris, coriac. estipulatis. *Flores* monoclini, solitarii, subsess. later. et axillar., speciosi: calyx adnatus et sæpe imbricato-bracteolatus, limbo 5-∞-mero; corolla rotata, ∞-dentata v. integra et corona duplici sæpe aucta. Stamina 10 pentadelpha v. ∞ — libera, anther. 1-2-locul.. *Ovarium* innat. et toro coronat., 5-locul.<, stigmate peltato 5-6-gono, ovul. plurib. pend. anatropis? *Amalthæa* polysperma, sem. angulata, exalbumin., cotyled. crassis, radic. brevi, retracta. Spec. 3.: — *Napoleona*, *Asteranthos*.

### FAM. 124. CUCURBITACEÆ.

Hbæ annuae, scandentes, perennes, sæpe macrorrhizae, v. frutices, foliis sparsis, palmatinerviis, palmatis, lobatis v. integris, asperis; cirrhis juxta foliaceis (phyllogenis?). *Flores* mon-dioeci, axillar., solitarii, fascicul. v. racemosi, flavi, albi

v. rubri, raro monoclini: calyx adnatus, limbo +— — manifesto, 3-5-mero, novello imbricato; corolla alternans, campanulata, rotata, 5-fida et quasi 5-petala v. cum calyce confluens. Stamina 5 alterna v. 3-2, connata, libera v. saepius geminatim connata, uno libero (triadelpha); filam. brevia, crassa, antheris 1-2-locul. extrorsis, passim longissimis et gyrosis, connectivum lobatum marginantibus. *Ovarium* innatum, e carpophyllis 3-5, adinstar legumen biloculare convolutis, conflatum, hinc 6-10-loculare, v. septis primariis evanidis 3-5-loculare v. et secundariis defluentibus uniloculare, placentis 3-5 (10) quasi parietalib. v. excentricis, ovulis anatropis, solitariis v. ∞, horinzontalib. <; in quibusdam ovarium ad folium unicum, ovulo 1 pendulo, reducitur; stylus brevis 3-5-fidus, stigmatib. crassis bifidis v. fimbriatis. *Amalthœa* baccata (pepo), saepe maxima, 1-3-5-locularis, oligo-polysperma, rarius sicca, dehiscens v. ad achenium monospermum reducta. Semina 1, 3, ∞, compressiuscula, passim crasso marginata, et parenchymate aquoso supra testam +— — crassam; embryo exalbuminosus, radicula brevi, plumula diphylla. Amaritie et principio drastico plures excellunt.

a. *Sechieœ:* ovario monophyllo, ovulo 1, pendulo: — *Sicyos, Sechium, Gynostemma.*

b. *Cucurbiteœ:* carpophyllis 3-5, ad axin et parietem productis, 1 - ∞ - spermis: — *Cyclanthera, Discanthera; Coniandra; Melothria, Anguria; Bryonia, Citrullus, Ecbalium, Momordica, Luffa, Benincasa, Lagenaria; Cucumis, Cucurbita, Trichosanthes, Elaterium....*

c. *Telfairieœ*: carpophyllis introflexis, ad parietem non productis; semin. ∞ nucamentaceis: — *Telfairia.*

d. *Nhandirobeœ:* staminodiis petalinis <, antheris 1-2-locularib., distinctis, ovario oligoo, passim semilibero; amalthaea 3-locularis, axi trigono maximo; semina crassa in loculis subgemina, erecta: — *Zanonia, Fevillea.*

# Classis X. Hypostephanæ.

## (Hypocorollia de Jussieu <).

Corolla synpetala hypogyna, raro peri-epigyna, nulla v. quasi dialypetala; androeceum sæpius monocyclum v. diantherum. Folia estipulata <, rarius secta v. composita.

## *Ordo I. Rhodorastra.*

Flores monoclini et regulares <, 2-5-7-meri, passim durabiles; stamina 1-2-cycla v. pauciora, ovar. 2 - 5 - 8 - phyllum, kionide libera v. innata, 1-8-loculare; fruct. 1 - ∞ - sperm.; semina albuminosa <; folia plerumque integra et alterna.

### FAM. 125. ALLIONIACEÆ *nob.*

Hbæ caudicatæ, acaules v. caulescentes, viscosæ, acri-nauseosae v. adstringentes, frutices, arbores, foliis estipulatis, simpl. nervosis v. venulosis, raro pinnatifidis. *Flores* monoclini <, axill. v. terminales, solitarii, racemosi, spicati v. aggregati et involucrati, sæpe durabiles: calyce obsoleto v. 4-5-mero, corolla tubulosa; limbo integro v. 3-4-5-10-mero. Stamina 1-10 v. monocycla, alterna v. opposita, antheris normalibus. Ovarium 1-5-stylum, ovulis 1-pluribus, ana-amphitropis. Fructus parvus 1-spermus, rarius bilocularis, 2 - ∞ - spermus; albumen farinaceum v. subcarnosum, raro O; embryo rectus, curvat. v. conduplicatus. — Familiæ 3 auctorum, an jungendæ?

a. *Plantagineæ.* Hbæ, suffrutices, caudice terrestri, acaules v. caulescentes, foliis confertis-epigeis v. oppositis et sparsis, nervosis, integris v. pinnatifidis. *Flores* (raro diclini) in spicas axillares, elatas congesti, præter antheras, durabiles: calyce 4-mero subscarioso, novello imbricato, v. 3-sepalo — unilaterali; corolla scariosa, limbo 3-4-fido. Stamina 4 alterna (1), filamentis gracilib., novell. inflexis, demum exsertis, antheris versatilibus. *Ovarium* biloculare <, ovulis in placenta

septante peltatis, amphitropis, utrinque solitariis, geminis — collateralibus v. pluribus, raro unico erecto; stylo simpl. terminali. *Nucula* monosperma v. *capsula* circumscissa, bilocul., 2 - 4 - 8 - sperma, septo mobili; testa membran. v. mucilaginosa, hilo subventrali; albumen subcarnosum, embryo subæquilongus, axilis, rectus, radic. infera, raro curvatus et extrarius: — *Littorella*, *Bougueria*, *Plantago (Psyllium)*.

b. *Staticeæ*. Caudex terrestris, scapiger v. elatus et arborescens, foliis confertis — epigeis v. sparsis, simplicibus. *Flores* ☿, in spicas sæpe secundas et ramosas v. capitula involucrata congesti, 2-3-bracteati, calyce scarioso v. coriaceo, 5-mero, petalis ⊣ — connatis, staminigeris, nov. contortis, durabilibus. Stamina 5 opposita, filam. gracilibus, novell. strictis. *Ovarium* lib. 3-4-5-phyllum, uniloculare, ovulo 1, anatropo, e funiculo adscendente pendulo; styli 5-3-4 distincti, basi embolifera. *Utriculus* induviatus, basi ruptilis; albumen farinac. parcum, cotyledones planæ, radicula brevi, supera: — *Armeria*, *Statice*, *Aegialitis*.

c. *Plumbagineæ:* hbæ, suffrutices, foliis sparsis, calyce herbaceo, 5-sepalo v. dentato, glanduloso <, corolla tubulosa v. hypocrateroidea, stylis connatis (O), utriculo acroschizo; cætera Staticearum: — *Ceratostigma*, *Plumbago*, *Vogelia;* — *Salvadora* (frutex articulatus, foliis oppositis <, paniculis micranthis axillaribus, florib. 4-meris, stigmate sessili, ovulo erecto, bacca monosperma, embr. exalbuminoso) an huc?

d. *Nyctagineæ*. Hbæ, frutic. arbores, ramis nodoso-articulatis, foliis venulosis, oppositis, rarius sparsis, integris, integerrimis <. *Flores* monoclini <, solitarii v. aggregati, involucro vario, v. cymosi, paniculati: perigonium corollinum v. extus rude, subcalycinum, marcescens, limbo 4-5-10-mero v. truncato, novello plicato; stamina 2-5-10, passim inæquilonga, basi connata v. unilateralia. *Ovarium* ovulo 1, erecto, sessili, amphitropo? stylo elongato, nov. involuto, raro nullo, stigmate subcapitato v. multifido. *Caryopsis* perigonio omni v.

imo, duro, demum adnato induviata; embryo extrarius, phyllolobus, conduplicatus v. rectus, albumine farinaceo, ± — copioso:— *Boerhaavia, Abronia, Nyctago, Oxybaphus, Allionia, Okenia, Bugenvillea, Reichenbachia, Neea, Pisonia*....

FAM. 126. LYSIMACHIACEÆ *nob.*

Herbæ annuæ v. caudicatæ, acaules v. caulescentes, frutices et arbores minores, passim principio acri-nauseoso, resinoso, balsamico v. acidulo insignes, foliis estipulatis, confertis-epigeis v. caulinis sparsis, oppositis v. verticillatis, integerrimis v. dentatis, raro lobatis, quibusdam glandulosis. *Flores* monoclini, raro diclini v. irregulares, caudicales, axillares, terminales, solitarii, umbellati, racemosi v. spicati, perigonio novello utroque tortili <: calyx 5-4-6-7-merus, persistens <, corolla hypogyna, alternans, decid. v. marcescens, rotata, campanulata, infundibulif., raro dialypetala v. O; *androeceum* corollæ *oppositum* et isomerum, passim c. parastemonib. alternis, filamentis ± — corollæ innatis v. basi monadelphis, antheris normalib., raro connatis, extrorsis v. biporis. *Ovarium* synstylum, liberum, raro basi innatum, sepalis isomerum et oppositum, uniloculare, placenta axili, globosa v. elongata, filis arachnoideis fugacibus, ad verticem ovarii tendentibus, ovulis ∞, paucis v. solitariis, peltatim amphitropis, raro anatropis. *Capsula* valvaris v. circumscissa, uniloc. poly-oligosperma v. *bacca*, *drupa* monosperma; semina foveolis placentæ immersa, subangulata, hilo ventrali v. basilari, albumine carnoso v. subcorneo, embryone excentrico, transverso, teretiusculo, radicula longiori, vaga.

a. *Primuleæ*: hbæ annuæ v. perennes, acaules v. caulescentes, capsula valvari v. operculata, libera: — *Centunculus, Anagallis*; — *Glaux, Coris, Trientalis, Naumburgia, Lysimachia;* — *Soldanella, Cyclamen, Dodecatheon, Cortusa, Primula, Androsace, Douglasia;* — *Hottonia*....

b. *Samoleæ:* hbæ, frut. arb., ovario basi innato, capsula v. bacca polysperma: — *Samolus; Mœsa.*

c. *Ardisieæ:* suffrut.— arbores, fl. 1-2-clinis, ovario libero, 1-∞-ovulato, bacca v. drupa plerumque monosperma: — *Embelia; Myrsine, Badula, Cybianthus, Wallenia, Ardisia....*

d. *Theophrasteæ:* frut. arb., antheris extrorsis et parastemonib. alternis, bacca polysperma: — *Jacquinia*; *Theophrasta, Clavija...*

e. *Aegicereæ:* arbusculæ, foliis sparsis, calyce et corolla opposite-tortilibus, antheris phragmiferis, ovulis ∞, folliculo monospermo, albumine O, cotyledonib. in tubum connatis: — *Aegiceras.*

FAM. 127. PYROLACEÆ *nob.*

Hbæ-frutices, foliis sparsis < estipulatis, integris-integerrim. v. dentâtis, utplurimum durabilibus et tannicis, v. abortivis. *Flores* mono-diclini, axill. v. terminales, solitarii, racemosi v. aggregati: sepala 2-3-5-8, ⊣ — connata; petala alterna, 3-5-8, sublibera v. connata, novella imbricata; stamina isomera, alterna v. dupla, antheris normalib. v. peri-acroschizis et subunilocularibus---arcuatis, toro hypogyno quibusdam lobato v. obsoleto. *Ovarium* synstylum<, 2-9-16-loculare, placentis axilibus, ovulis ∞ v. solitariis, ana-campylotropis? *Capsula* 3-6-locular. polysperma, loculicida v. *bacca* 2-∞-pyrena; semina scobiformia ∞ v. solida et solitaria, albumine carnoso, embryone minimo v. cylindrico -- brachylobo.

a. *Monotropeæ:* hbæ orobanchoideæ, caule squamigero, floribus termin. solitar. v. racemosis, albis v. roseis: calyx 4-5-partitus, O v. bracteis suppletus; petala persist. 4-5, ⊣ — connata, stamina dupla, antheris transversis, arcuatis, subunilocularibus; ovar. synstylum, stigmate crenato; capsula 4-5-locularis, loculicida; semina ∞ scobiform. v. alata, embryone minimo integro? — *Monotropa, Schweinitzia, Pterospora..*

b. *Pyroleæ:* hbæ perennes — frutices orgyales, foliis imis, sparsis v. verticillatis, integerrim. v. dentatis, flor. ☿ solitar. v. racemosis, term. v. axillar., albis, roseis, calyce 4-5-partito, petalis 5 vix connatis, androeceo dialy- v. symmero, antheris 10 v. 5 c. parastemonibus, introrsis, bilocul. biporis v. unilocular., ovario 3-5-6-locul. synstylo; capsula loculicida <; semina ∞ scobiformia, embr. minimo, brachylobo: — *Galax; Pyrola, Chimophila, Cladothamnus.*

c. *Empetreæ:* fruticuli ericoidei, foliis sparsis, coriac. angustis, revolutis, florib. parvis, diclinis < axillarib., solitariis, fasciculat. v. aggregatis et imbricato-bracteolatis: sepala 3-2 imbricata, petala et stam. 3 alterna, marcescentia, antheris decid. dorsifixis, perischizis, bilocularibus; ovarium 2-3-6-9-loculare, ovulis solitariis horizontalib. campylotropis, stylo apice lobato. Bacca 2-9-pyrena; semina compresso-trigona, axi appensa, albumine dense-carnoso, embr. cylindr. excentrico, subæquilongo, brachylobo: — *Oakesia, Corema, Empetrum, Ceratiola.*

d.? *Pholismeæ:* hbæ orobanchoideæ, americanæ, caule simpl. v. ramoso, flor. termin. monoclin. spicatis: calyx 6-8-partit., corolla tubulosa, curva, limbo 6-8-dentato, plicato, imbricato, anther. brachynemis, corollæ mediæ insertis, normal.; ovar. subglob. ∞-locul., axi crasso, ovulis solitar. pend. v. ascend., stylo elong. apice ∞-lobo; bacca v. capsula? 16-loculari.... *Pholisma, Corallophyllum.*

### FAM 128. RHODORACEÆ.

Fruticuli, frutices, arbores, foliis sparsis, opposit. v. verticillatis, coriaceis et durabilib. <, angustis v. latis, integris (et dentatis), estipulatis, basi articulatis <. *Flores* monoclini et regulares <, axill. v. terminales, solitarii, cymosi, racemosi v. aggreg. et involucrati: sepala 4-5, libera et decussata v. connata; corolla e toro hypo-perigyno, persistens v. decidua, petalis 3-6, ⊣ — coalitis, novell. imbricatis <; stamina isomera,

alterna v. dupla, raro monadelpha, antheræ normales v. perischizæ, duræ, passim bicornes v. basi bifidæ et appendiculatæ, poro v. rima dehiscentes et subuniloculares; pollinia 3-4-cocca <. *Ovarium* liberum, 3-8-phyllum, placentis circa axin styliferam verticillatis, ovulis anatrop. ∞, 2 v. solitariis (pendulis); stigma capitat. v. peltat. et lobatum. *Capsula* 3-8-locularis, loculi-septicida, quibusd. baccata; sem. solitar. v. ∞, solida, scrobiculata v. scobiformia, album. carnoso, embr. teretі, rad. longiori supera <.

*A.* Epacrideae: folia raro opposita et serrata, passim semivaginantia, flores 2-∞-bracteati, albi, rosei, purpurei, stam. isomera v. pauciora, antheris subunilocularibus, ovario 2-10-1-locul.; drupa, bacca v. capsula 1-10-locul., 1-5-∞-sperma; embryo albumine $\frac{1}{2}$ longior, brachylobus:

1. *Epacreæ:* ∞-ovulatæ, capsulares, corolla nov. imbricata <, pollinia 3-cocca (R. Br.): — *Diapensia;* — *Dracophyllum*, *Sprengelia*, *Andersonia*, *Lysinema*, *Epacris*....

2. *Styphelieæ:* ovulis solitariis, drupaceæ v. baccatæ, corolla nov. valvata <, pollinia simplicia: — *Acrotriche*, *Leucopogon*, *Lissanthe*, *Cyathodes*, *Astroloma*, *Styphelia*.....

*B.* Ericariae: stamina iso-diplomera, antheris normal., bicornibus v. appendiculatis.

1. *Ericeæ:* micro-stenophyllæ, eperulatæ, corolla marcescente 4-mera <; pollinia 4-cocca; capsula 1-4-5-8-locularis, loculicida <, loculis 1-2-∞-spermis: — *Salaxis*, *Scyphogyne*, *Coilostigma*..; *Syndesmanthus*, *Sympieza*, *Eremia*..; *Blæria*, *Bruckenthalia*, *Erica*, *Calluna*?..

2. *Rhodoreæ:* platyphyllæ < sæpe perulatæ, flor. 5-7-meri, corolla decidua, capsula loculi-septicida v. bacca: — *Cassiope*, *Cassandra*, *Andromeda*, *Gaultheria*, *Clethra*; *Arbutus*, *Arctostaphylos*; — *Bryanthus*, *Phyllodoce*, *Daboecia*, *Menziesia*, *Bejaria*, *Ledum*, *Kalmia*, *Osmothamnus*, *Azalea*, *Rhododendron*....

*C.*? Roussaeariae: frutex scand., ramis nodosis, foliis oppositis obovatis, serratis, coriaceis; *flores* axillar. solitar. novelli

valvati, perulati, calyce 4-5-partito, toro hypo-perigyno, lobato, petalis alternis, basi connatis, apice circinatis, extus villosis; stamina 4-5 alterna, robusta, stricta, antheris basifixis, sagittatis, extrorsis, bilocul., exsertis; *gynoeceum* pyramidale 4-5-loculare, carpophyllis antesepalinis, stigmate angulato, placentis axilibus porrectis, ovulis ∞ anatropis; *bacca* conica, semin. ∞ lævissimis; albumine carnoso, embr. centrali, parvo, brachylobo: — *Roussœa.*

*D.* Penaeariae: frut. Capenses, viscoso-resinosi, sempervir., foliis opposit. decussat. coriaceis; flores ☿ axill. v. termin., bracteis 2 (sepala?) v. ∞, imbricatis, corolla rudi, 4-fida, persistente, novell. valv. v. imbricata; stamina 4-alterna v. 8, filament. ⊣— innatis, antheris normalibus. *Ovarium* lib. 4-loculare, synstylum, ovulis geminis, collateral. anatrop. erect. v. pendulis. Capsula loculicida, 8-sperma <, embryo?— *Penœa* (Callunæ subsimiles), *Sarcocolla; Geissoloma.*

## *Ordo II. Vincastra.*

Flores regular. <, raro diclini v. nudi, calyce 5-3-14-mero, corollæ nov. lobi valv. v. contorti; stam. 1-∞-cycla v. parapetalis aucta aut 2; ovar. 2-∞-phyllum, 1-∞-locul.; folliculus duplex, capsula, bacca v. drupa 1-∞-spermæ; albumen ⊣— copios. v. O. Pluribus succus lacteus v. amarus et folia opposita, rarius alterna v. composita.

### Fam. 129. Chironiaceæ. *nob.*

Hbæ annuæ — arbores, quædam volubiles, succo aqueo, ⊣— amaro, foliis estipulatis <, oppositis et verticillatis, raro alternis v. imis, simpl. integerrimis (exclusis Villarsieis), nervosis <. *Flores* monoclini, regulares < axillar. v. terminales, cymoso-fasciculati, racemosi, thyrsoidei v. solitarii: calyce persistente, quibusdam spathacco, sepalis 5-4-12, ⊣— connatis, novellis valv. v. imbricatis; corolla decid. v. marcescens, tubo elon-

gato v. O, quibusdam fauce coronata v. basi foveolata, squamigera v. calcarata, novella contorta v. induplicato-valvata. Stamina e tubo v. fauce, lobis corollæ isomera< et alterna, antheris normal. basi-dorsifixis, quibusdam biporis v. demum tortilibus. *Ovarium* liber. diphyllum (raro 3-5-phyllum), 1-2-3-4-loculare, placentis parietalib. v. centralibus, ovulis ∞ < ana-amphitropis, stylo longiori v. O, stigm. bilobo v. integro. *Capsula* uni-bi-(3-4-)locularis, quibusdam baccata v. drupacea, poly-oligosperma; sem. globosa, angulata, compressa v. alata, albumine carnoso v. corneo. — Spec. 640? DC. et Griesebach.

a. *Villarsieæ:* herbæ hygrobiæ, caudice prostrato, foliis alternis< ternato-sectis v. reniform. et crenatis, corolla 5-fida, nov. induplicativa, capsula unilocul. bivalvis, rachicida<, seminib. minutis, embryone minimo, album. carnoso: — *Menyanthes, Villarsia, Limnanthemum.*

b. *Gentianeæ*: hbæ, suffrut., fol. opposit. verticillat. raro alternis, corolla 5-4-10-fida, nov. sinistrorsum contorta, capsula 1-2-loculari, poly-oligosperma, raro baccata, embr. minuto, album. carnoso. (Swertieæ, Lisiantheæ, Chloreæ et Chironieæ — Griesebach): — *Swertia*, *Frasera*, *Halenia*, *Stellera*, *Anagallidium*, *Pleurogyne*, *Gentiana;* — *Leianthus*, *Prepusa*, *Lisianthus;* — *Chlora*, *Ixanthus*, *Canscora*, *Cicendia*, *Erythræa*, *Schubleria*, *Belmontia;* *Sebæa*, *Sabbatia;* — *Exacum*, *Orphium*, *Chironia*....

c. *Loganieæ:* hbæ – arbores, fol. opposit. substipulatis, corolla 5-4-10-fida, nov. convolutiva, stamin. isomeris v. pauciorib., ovario 2-4-1-loculari, ovulis amphitr., rarius anatropis; capsula bilocul., septicida, septifraga v. circumscissa, passim baccata, raro 2-1-pyrena; semina peltata v. subrecta, sæpe alata, albumine carnoso v. corneo, embr. brevi v. longiori: — *Logania, Geniostoma; Potalia*, *Anthocleista*, *Fagræa; Gärtnera*...

d. *Strychneæ:* differunt a Loganieis corolla nov. valvata; — Usteria 1-andra; Labordiæ capsula 3-locularis; An-

toniæ calycees bracteolis involucrati : — *Mitreola*, *Spigelia*; *Usteria*; *Labordia*; *Antonia*; *Gardneria*; *Ignatia*, *Strychnos*....

FAM. 150. VINCACEÆ *nob.*

Hbæ perennes, frutic. passim volubiles v. arbores, succo lacteo <, foliis integris, integerrim., oppositis, estipulat. <, rarius verticill., sparsis v. hebetatis. *Flores* monoclini, cymosi, conferti v. solitarii, sæpius axillares : sepala 5(4) + — connata, nov. imbric. <; corolla 5-mera <, sæpe parapetalis variis aucta, nov. contorta v. valvata; stamina 1-cycla (5-4), inter se, cum corolla v. stigmate cohærentia, anther. bilocular. introrsis, polliniis discretis v. conferruminatis. *Ovarium* diphyllum, bi-uniloculare, stylis perfecte v. sursum connatis, stigmate plus minus crasso, sæpe pentagono et retinaculis pollinariorum c. antheris alternantibus prædito, *ovulis* ∞ <, amphi- v. anatropis, sæpius pendulis. *Folliculi* gemini (raro solitar.), quibusd. in capsulam, baccam v. drupam effigurati; sem. nuda v. comosa, album. carnoso, corneo v. O, embr. phyllolobo <. Spec. 1660 DC. Tribus v. familiæ 2, vix ullis notis perfecte distinctae :

A. ASCLEPIADEAE s. STAPELIARIAE. Hbæ, v. frutic. passim volubiles, raro arbores, fol. opposit., quibusd. suppressis, verticillat. stipulat. v. ascidiomorphis. *Flores* extraxillares v. axillar., cymoso-umbellati, rarius racemosi v. solitarii : calyx basi intus 5-10-adenus <, corolla rotata, rarius campanulata v. hypocrateroidea, sæpe ad sinus glandulis v. parapetalis variis prædita. *Androeceum* basi corollæ adnatum et symmerum < (gynostegium ovaria includens), antheris 5 c. appendicibus lateral. et apicalib. variis, polline in massas 5-10-20 caudiculatas conferruminato. Stigma crassum, stylis duobus commune (stylotegium), discoideum, 5-gonum, ad angulos corpusculis cartilagineis (retinaculis) c. antheris alternantibus et massas pollinicas v. earum caudiculas retinentibus instructum, c. mammula centrali biloba, v. conicum-integrum v. 2-

7-fidum, raro cupulare. *Ovaria* 2, ovulis ∞, e placentis suturalibus ascend. v. pendulis, anatropis, imbricatis. *Folliculi* 2, raro solitar. v. carnosi; sem. ∞ compressa, imbricata, comosa <.

a. *Stapelieæ (s. Ceropegieæ):* hbæ carnosæ foliis hebetatis — v. frutic. volubiles foliati, gerontogei, androcceo symmero, antherarum apice membranaceo; pollinaria 10 geminatim retinaculis adfixa, ascend. v. erecta: — *Hoodia, Stapelia, Huernia, Piaranthus, Apteranthes, Brachystelma, Ceropegia, Hoya, Centrostemma, Dischidia, Leptadenia; — Sarcolobus, Gymnema; — Pergularia, Marsdenia, Tylophora*.....

b. *Gonolobeæ:* hbæ v. frutic. volub. Americæ; filamenta connata, pollinaria 10, geminatim retinaculis adfixa, horizontalia, sub stylotegio depresso 5-gono occultatæ: — *Blepharodon, Fischeria, Gonolobus*.....

c. *Cynancheæ:* differunt a præcedentib. pollinariis pendulis: — *Oxypetalum (Tweedia); — Ditassa; — Asclepias, Gomphocarpus*; — *Cynanchum, Eustegia; — Oxystelma, Sarcostemma, Calotropis; — Arauja, Solenostemma, Cynoctonum; — Vincetoxicum, Metastelma; — Microloma; — Astephanus*...

d. *Secamoneæ:* filam. connata, antheræ 4-locul., pollinaria 20, quaternatim retinaculis adfixa, erecta, minuta: — *Toxocarpus, Secamone*..

e. *Periplocæ:* filam. superne v. omnino libera, antheræ 1-4-locul., pollinaria 5-20 granulosa, solitarie v. quaternatim apicibus dilatatis retinaculor. adfixa: — *Periploca; Hemidesmus, Cryptostegia*....

B. Apocynariae (Apocynaceæ Alph. DC.). Hbæ, frut. volubiles v. arbores, fol. oppos. v. verticillat., rarius alternis. *Flor.* termin. v. interpetiolares, corolla sæpius infundibulari v. hypocrateroidea, intus nuda, pilosa v. coronata, lobis 5(4) inæquilateris, nov. contorto-imbricatis, raro valvatis; *stamina* e tubo 5(4), brachynema, antheris ovat. v. sagittatis, acuminat. et caudatis, lib. v. c. disco stigmatis cohærentibus, polline granuloso. *Ovarium* duplex v. 2-1-loculare, sæpe toro hypo-

gyno 2-5-lobo stipatum, ovul. ∞ <, amphi- v. fere anatropis; synstylium superne in annulum glandulosum v. discum campanulat. tumens. *Folliculi*, capsula, bacca v. drupa ∞ - 1-spermæ; sem. calva, comosa v. alata.

a. *Echiteæ:* ovaria 2 distincta, folliculi 2; semina superne, utrinque v. inferne comosa: — *Mascarenhasia, Dipladenia, Echites, Apocynum, Hæmadictyon, Thenaraia, Pachypodium, Nerium, Strophanthes*; — *Alstonia*; *Wrightia*....

b. *Parsonsieæ:* ovarium biloculare; sem. superne comosa: — *Beaumontia, Balfouria, Parsonsia*....

c. *Plumerieæ:* ovaria 2 distincta, folliculi ⊣— carnosi, baccati v. drupa; sem. calva: — *Aspidosperma, Plumeria, Cameraria, Amsonia, Vinca, Tabernæmontana, Urceola, Ochrosia, Tanghinia, Cerbera*; — *Alyxia*....

d. *Carisseæ* (et *Willughbeiæ*): calyx eglandulosus <, ovar. diphyllum, 2-1-loculare; bacca, drupa v. capsula; sem. calva, sæpe marginata: — *Thevetia*; — *Ophioxylon, Rauwolfia, Carissa* (*Arduinia*), *Melodinus, Vahea*; — *Craspidospermum*; — *Willughbeia*; *Allamanda*....

FAM. 131. SYRINGACEÆ *nob.* (s. OLEACEÆ).

Arbor. v. frutic. passim scand., foliis estipulat., sæpius opposit., simpl. v. imparipinnatis. *Flores* monoclini, rarius diclini v. apetali, cymoso-racemosi v. thyrsoidei, termin. v. axill., albi, lilacini v. flavi, odori <: calyx 4 - 5 - ∞ - lobus, persist. v. O; petala 4-5-8, ⊣— connata v. O, nov. valv. v. imbricata; stam. 2 brachynema, interpetalina, inclusa, anther. normal., connexivo vix ullo; torus O. *Ovarium* liber., loculis 2 c. staminib. alternis, ovulis anatrop. geminis, collateral., pend. v. erectis — v. 1-4 et plurib. biseriatis; stigma sess. v. stylosum, sæpius bilobum. *Drupa*, *bacca* v. *capsula* 2-1-loculares v. didymæ, 4 - 1 - ∞ - spermæ; albumen subcartilag. v. O, embr. æqui- v. semilongus, phyllolobus v. sarcolobus. Spec. 238. DC.

a. *Bolivarieæ*: fruticuli americani, fol. integris v. trisecto-pinnatifidis, cymis 1-3-floris, calyce 5 - ∞ - fido, corolla infundibulari, lob. 5, nov. imbric., ovario bilobo, ovulis ascend. 2-4, capsula cartilag. didyma, circumscissa, 4-8-sperma, album. O: — *Menodora*, *Bolivaria*.

b. *Jasmineæ:* frutices plerumque gerontogei, passim scand., fol. composit. 1-3-foliolat. v. pinnatis, calyce 5-4-8-lobo, corolla sæpius hypocrateroidea, lobis 5-8, novell. contortis, v. 4 valvatis, ovario bilobo, ovul. erectis 1-2-3; bacca v. capsula biloba, 2-4-sperma, album. O: — *Jasminum*, *Nyctanthes*, *Chondrospermum* ?

c. *Syringeæ:* arb. v. frutic. fol. simpl. v. pinnatis, flor. 4-meris, 1-2-clinis, syn - v. dialypetalis, v. apetalis et nudis; ovula gemina pend. v. plura; capsula indehiscens — samaroidea v. loculicida, 1-plejosperma: — *Fraxinus*, *Fontanesia*, *Syringa*, *Forsythia*, *Schrebera*.....

d. *Oleineæ* s. *Ligustreæ:* arbor. v. frutic., fol. simpl., flor. 4-meris, ovulis gemin. pendulis; drupa v. bacca 1-4-sperma, sem. passim exalbuminosa: — *Olea*, *Visiania*, *Notelœa*, *Osmanthus*, *Phillyrea*, *Ligustrum*; — *Chionanthus*, *Linociera*, *Noronhia*....

FAM. 132. SAPOTACEÆ *nob.*

Frutic. v. arbores, quædam resinosæ v. lactescentes, foliis estipul. integris, alternis, rarius oppos. v. dentatis, minut. v. magnis, brachypodis. *Flores* mono-diclini, regulares, axillar., cymosi conferti v. solitarii: calyx 3-7-merus, passim integer, dentat., ruptilis v. imbricatus; corolla 3-7-mera, nov. valvata v. imbricata, quibusd. parastemonib. v. parapetalis aucta; stamina ∞-1-cycla, lib. v. corollæ innata, antheris norm. v. perischizis et extrorsis, ovat. v. elongatis. *Ovarium* liber. <, 2 - ∞ - loculare, stigm. sess. v. styloso, integro v. lobato; ovula anatropa <, solitar. v. 2-plura, appensa, rarius ascend., partim abortiva. *Bacca* v. *drupa* 1 - ∞ - locularis; sem. solitaria <,

album. carnoso v. cartilag., raro O; embryo parvus v. æquilongus, sæpius phyllolobus. — Familiæ 5 auctor., ad tribus 4 reducendæ; species ultra 500.

a. *Olacineæ* (et *Styraceæ*). Arbores frutic., quædam spinosæ, scand. v. microphyllæ, aliæ flor. spicatis v. polygamis et organis basi articulatis. Calyx integer v. denticulatus, corolla 4-7-loba, nov. valvata <, stam. 2-1-cycla, passim c. parastemonib., antheræ norm., cordatæ v. elongatæ; ovar. 1-3-4-loculare, septis perfectis v. basilaribus et kionide libera, ovula anatropa, solitar. v. plura, appensa v. superiora erecta. Drupa 1-sperma <, calyce parvo v. magno stipata; album. carnosum, embr. parv. v. subæquilong., rad. supera v. infera: — *Opilia*, *Cansiera*; — *Olax*, *Heisteria*, *Ximenia*; — *Icacina*, *Gomphandra*, *Apodytes*, *Leretia*, *Pogopetalum*; — *Styrax*.

b. *Ilicineæ:* Arb. frut. sempervirentes, fol. alt. v. oppos.., glabris, passim dentatis; flor. 1-2-clini, parvi, perigonio utroque 4-6-mero, nov. imbricato, stam. 1-cycla, brevia, norm., corollæ innata et alterna; ovar. 2-8-locul., ovulis solitar. appensis, anatropis. Drupa 2-8-locular.; album. carnos., embr. minimo v. semilongo: — *Cassine*, *Ilex*, *Prinos*, *Nemopanthes*.....

c. *Diospyreæ* (s. *Ebenaceæ*; — Ebenus L. Leguminosa). Fruticuli — arbores, ligno duro, fol. altern. < integris. *Flor.* abortivo-dioeci, axill. <, solitar. v. conferti, sæpius 4-meri: calyx 3-7-lob., corolla 3-7-loba, extus sericea <, nov. sinistrors. tortilis; stam. brachynema 16 v. 3-50, lib. v. corollæ adnata ejusque lobis geminatim opposita, anther. norm. oblongis. *Ovarium* lib. hispid. <, loculis 3-7 intersepalinis v. 14 (subdivisis), ovul. solitar. v. binis, pend. anatropis. *Bacca* glob. v. ellipsoid., abortu oligosperma, sæpius coriacea et quibusd. semivalvata; sem. solitar. < testa coriac., album. cartilag., embr. semilongo, phyllolobo: — *Maba*, *Diospyros*, *Euclea*, *Royena*....

d. *Sapoteæ*. Frut. — arbor. intertropicæ, succo lacteo <, fol. alt., integris, coriaceis, penninerviis et subtus sericeis <. *Flores* 1-clini, axill., solitar. v. fasciculati: sepala -+- — connata

et imbric.; corollæ campanulatæ v. rotatæ lobi sepalis alterni et imbric. v. bini oppositi et sæpe staminodiis petaloideis aucti; stamina petalis oppos., alterna v. dicycla, antheris biloc., plerumque extrorsis v. perischizis. *Ovarium* lib., ∞-loculare, antesepalin. <, ovul. solitar. pend. v. ascend., anatrop. v. fere campylotropis. *Fruct.* drupac. v baccat. (raro dehisc.), loculis partim abortivis; sem. glob. v. ellipsoid. compressa, testa ossea v. crust., hilo infero v. laterali elongato, album. carnoso, oleoso, v. O, embr. æquilongo, phyllo- v. sarcolobo, radic. breviori: — *Chrysophyllum*, *Lucuma*, *Sapota*, (*Achras*), *Sideroxylon*, *Argania*, *Bumelia*, *Bassia*, *Imbricaria*, *Mimusops*....

## *Ordo III. Solanastra.*

Flor. monoclini et 5-meri <, sæpe irregulares; stamina 1-cycla, didynama v. 2; ovar. plerumque diphyllum, 1-5-loculare; nucula, capsula, bacca v. drupa; sem. plerumque albuminosa; folia rarius opposita et secta.

### FAM. 155. BONTIACEÆ *nob.*

Frutices, fruticuli v. hbæ caule nano v. elato, foliis estipulatis, sparsis, rarius oppositis, verticillatis v. in caule nano confertis, integris, integerrim. dentatis v. incisis. *Flores* monoclini <, sæpius irregulares et axillares, cymoso-spicati, corymbosi, aggregato-involucrati et involucellati v. solitarii, calyce et corolla 4-5-meris, novellis imbricatis, 2-4-5-andri, antheris normalib. v. unilocularib., raro connatis. *Ovarium* lib. diphyllum, 1-2-4-loculare, acrostylum, stigmate bilobo v. integro, ovulis anatropis, pendulis v. erectis, solitariis, raro geminis v. bigeminis. *Fructus* 1-4-spermus, calyce persistente stipatus, pericarpio membranaceo, duro v. drupaceo. Embryo axilis, subæquilongus v. brevior, albumine carnoso, + — copioso v. O.

a. *Brunonieæ:* subacaules, fol. spathulatis, pedunculis plurib. monocephalis, florib. aggregato-involucratis et

involucellatis, 5-meris, synanthereis; ovulo 1 erecto, stigmate bilobo (indusiato?); utriculus induviatus; embryo exalbuminosus, amygdalinus: — *Brunonia.*

b. *Globularieæ:* frutices majores v. nani, foliis integerr. v. apice tridentatis, pedunculis monocephalis, florib. irregular., aggregato-involucratis, receptaculo paleaceo, calyce et corolla aniso-pentameris; stamina 4 didynama, antheris arcuatis, subunilocularibus; ovul. 1 pendulum; utriculus induviatus, embryo albumini subæquilongus; — *Globularia (Alypum).*

c. *Hebenstreitieæ* (*Selagineæ*): fruticuli v. hbæ, foliis sparsis, rarius oppositis v. verticillatis, passim dentatis v. incisis, florib. terminal., 1-3-bracteatis, spicatis v. corymbosis, calyce spathaceo v. 2-3-5-mero, corolla 4-5-fida, ↤— regulari, stamin. 2 posticis v. 4 didynamis, antheris 1-2-locular.; ovarium biloculare, ovulis solitar. pendulis v. erectis; capsula bipartibilis, disperma, passim anisomera v. utriculus-nucula monosperma, embryo albumine brevior v. subæquilongus: — *Stilbe*, *Campylostachys*; *Polycenia*, *Hebenstreitia*, *Agathelpis*, *Selago*....

d. *Myoporeæ:* frutices, foliis sparsis v. oppositis, integris v. serratis, passim resinoso-glandulosis, florib. axillar. solitariis — cymosis, calyce 5-mero, corolla ↤— regulari; stamina 4 didynama (c. parastemone), antheris 2-locular. v. arcuatis; ovarium 2-4-loculare, ovulis pend. geminis collateralib. v. bigeminis superpositis; drupa baccata v. coriac., putamine 2-4-loculari, 4-spermo, albumen parcum, embryone subæquilongo: — *Myoporum*, *Pholidia*; *Eremophila*, *Stenochilus*, *Bontia*....

FAM. 154. VERONICACEÆ *nob.* (Personatae, Scrofulariaceae etc.).

Hbæ, frutic. arbores, caule tereti v. 4-gono, foliis estipulatis, sparsis, opposit. v. verticillatis, integris, integerrimis v. pinnatisectis, imis v. abortivis. *Flores* monoclini, irregulares <,

laterales v. terminales, cymoso-spicati, racemosi, thyrsoidei v. solitarii: calyx persist., 5-4-merus, lobis sursum majoribus <, rarius adnatus, bilobus v. spathaceus; corolla tubo elongato v. brevissimo, amplo v. gracili, quibusd. basi gibbo v. calcarato, limbo bilabiato ($\frac{1-1}{3}$), personato, raro subregulari, novello imbricato <. Stamina e tubo 4 didynama, raro 5 v. parastemone aucta, sæpius 2, lateralib. v. anticis suppressis; antheræ normales v. loculis divaricatis, subconfluentib. (arcuatæ), solitariis v. dimorphis, quibusd. per paria cohærentes. *Ovarium* diphyllum, biloculare, acrostylum, stigmate bilobo <, rarius unilocul. v. 4-phyllum, placentis hinc centralib., excentricis v. parietalibus, ovulis ∞ anatropis, raro amphitropis v. definitis. *Capsula* 2-1-locularis, loculi-septi-rachicida, v. baccata et indehiscens. Semina ∞, rarius pauca v. solitaria, testa solida, scrobiculata, lævis, laxa v. marginata, hilo basilari v. subventrali, album. carnoso, cartilag. v. nullo, embr. axili, minuto v. æquilongo, recto, raro arcuato.

A. Orobanchariae. Caudex fibrillatus, tuberosus v. cylindricus — ramosus et squamosus, ad radices aliar. plantarum parasitans, scapos squamigeros v. nudos, non virides-centes, solitarium v. plures, simpl. v. ramosos exserens; *flores* racemosi <, passim 1-3-bracteolati, corolla 1-2-labiata, basi circumscissa persistente <, stam. 4, antheris 2-1-locularibus; ovarium 2-4-phyllum?, sæpius unilocul., stylosum, carpophyllorum dextri et sinistri placentis geminatis excentricis, rarius contiguis, ovulis anatropis. *Capsula* unilocul. bivalvis, polysperma, quibusd. vertice v. medio findenda; albumen diaphan. copiosum, embryone minimo: — *Phelipæa*, *Orobanche*, *Boschniakia*, *Lathræa*, — *Aeginetia*....

B. Veronicariae. Hbæ, frutic., raro arbores, foliis integris — pinnatisectis, raro abortivis, corol. 5-mera v. 2-4-8-loba, nov. imbric. raro plicata, capsula biloculari et ∞-sperma <, raro baccata; embryone minuto v. majori, raro arcuato v. exalbuminoso: (Spec. 2025, Betham et DC.).

a. *Rhinanthinae*: calyx 2-4-lobus<, corollæ novellæ labium superius 1-2-lob., planum v. galeatum, lobo laterali uno v. utroque tectum, antheræ muticæ v. basi mucronatæ, quibusd. dimidiatæ; capsula sæpius loculi— et placenticida, ∞-1-sperm. (Rhinantheæ, Veroniceæ, Buddleieæ, Sibthorpieæ etc.): — *Tozzia*, *Melampyrum*; *Pedicularis*, *Rhinanthus*, *Rhynchocoris*, *Bungea*, *Cymbaria*, *Euphrasia*, *Odontites*, *Bartsia*, *Trixago*, *Eufragia*, *Schwalbea*, *Castilleja*; *Aulaya*, *Sopubia*; *Gerardia*; — *Striga*, *Buchnera*; *Veronica*, *Pœderota*; *Wulfenia*, *Erinus*, *Digitalis*; — *Buddleia*; — *Scoparia*, *Capraria*, *Sibthorpia*, *Limosella*, *Hydranthelium*...

b. *Pinguiculinae*: herbæ hygrobiæ, foliis integerrim. v. ∞-fidis, rhizomorphis, ampulliferis, raro peltatis; scapis unifl. v. racemosis: calyx 2-3-5-lobus, corolla brevis, person. v. 5-fida, calcarata, stam. 2 antica brachyn., antheris subuniloc.; *ovarium* diphyllum, uniloculare, brachystylum, stigmate 1-2-labiato, placenta basilari, globosa; capsula subglobosa, ∞-sperma, bivalvis v. ruptilis, albumen O, embr. indiviso v. brachylobo (Celsiæ): — *Brandonia* Rchb. *Pinguicula*, *Doerrienia* Rchb. *(Genlisea)*, *Utricularia*...

c. *Antirrhininae*: corolla brev. v. tubulosa, 2-5-loba, labio superiori novellæ externo; antheræ plurium confluenti-unilocul., capsula sæpius septicida v. acroschiza et dentata. (Calceolarieæ, Verbasceæ, Antirrhineæ, Gratioleæ etc.): — *Calceolaria*; *Verbascum*, *Celsia*; *Alonsoa*, *Angelonia*; *Hemimeris*, *Nemesia*; — *Anarrhinum*, *Linaria*, *Antirrhinum*, *Maurandia*, *Lophospermum*, *Rhodochiton*; *Paulownia*, *Halleria*, *Scrofularia*, *Collinsia*, *Chelone*, *Pentstemon*, *Russelia*, *Tecdia*, *Leucocarpus*; — *Escobedia*, *Melasma*; *Aptosimum*; *Nycterinia*, *Liperia*, *Chenostoma*, *Manulea*; *Diplacus*, *Mimulus*, *Dodartia*; *Lindenbergia*, *Stemodia*; *Herpestis*, *Gratiola*...

d. *Salpiglossinae*: folia omnia alterna, corolla 5-mera, subregularis, novella plicata v. imbricato-bilabiata, lobis

superis externis; stam. 4 didynama v. 2, anther. 2-1-locul.; ad Solanac. vergunt: — *Schizanthus*, *Salpiglossis*, *Brunfelsia*, *Browallia; Schwenkia*, *Anthocercis*, *Duboisia*....

C. Gesneriariae. Hbæ ann. v. perenn., quædam scand. et fruticosæ, caule passim tetragono et fol. sæpius oppositis, integris—serratis, calyx lib. v. adnatus 5-merus, nov. valvatus, corolla irregul. ($\frac{2}{3}$); stam. 4-2 c. parastemone <, antheris 1-2-locular., sæpe per paria cohærentibus, toro hypo-epigyno, passim 5-lobo v. unilaterali; ovarium unilocul., stylosum, carpophyllorum, antici et postici, marginibus + — ad centrum porrectis, ovulis ∞ anatropis; fructus unilocular. baccat. — v. capsula subglobosa v. siliquæformis, tortilis, bivalvis, rachicida, raro circumscissa; albumen + — copiosum v. 0; embryo teres. Spec. 260.

a. *Gesnereæ*, albuminosæ, calyce + — adnato: — *Rhytidophyllum*, *Conradia*, *Gesneria*, *Gloxinia*, *Achimenes*...

b. *Besleriæ*, albuminosæ, calyce libero: — *Besleria*, *Columnea*, *Alloplectus*, *Episcia*....

c. *Didymocarpeæ*, exalbuminosæ, capsulares: — *Liebigia*, *Aeschynanthus; Didymocarpus*, *Streptocarpus*, *Bœa; Rehmannia*, *Loxonia*, *Loxocarpus*; *Epithema*....

d. *Cyrtandreæ*, exalbumin. baccatæ: — *Fieldia*, *Gasparinia*, *Cyrtandra*....

D. Crescentiariae. Arbores v. frutices, fol. oppos. v. alternis, simpl. v. pinnatis, florib. Lophospermi, toro hypogyno lobato, fructu coriaceo, lignoso v. baccato, indehisc. 1-2-4-loculari, embryone exalbuminoso (?): — a) *Tanaecieæ* DC: — *Periblema*, *Phyllarthron*, *Colea*, *Parmentiera*, *Spathodea*, *Tanæcum*, *Schlegelia*. — b) *Crescentieæ* Bojer: — *Crescentia*, *Kigelia*, *Tripinnaria*.

### FAM. 135. SOLANACEÆ.

Hbæ ann.—frutic. arbores, foliis estipulat. sparsis <, integris, integerrim., dentat., lobat. v. pinnatisectis. *Flores* mo-

noclini, regulares <, ebracteati, sæpius laterales, cymosi — solitarii v. numerosi, calyce lib. 5-4-6-mero, persistente omni v. imo, passim accrescente; corolla hypogyna, tubo brevi v. elongato, limbo calyci isomero, novello plicato-valvato, raro convolutivo. Stamina e tubo, isomera et alterna, antheris normal., basi-dorsifixis, quibusd. coalitis et acroschizis. *Ovarium* e carpophyllis 2, dextro et sinistro, conflatum, synstylum, 2-loculare, rarius 3-4-5-loculare, a septis accessoriis v. carpophyllis, numero auctis, placentis linearib., hemisphæricis v. bilamellatis, ovulis ∞ amphitropis <. *Capsula* bilocularis, septicida v. septifraga, bivalvis, sæpe *baccata*, indehisc. et induviata, rarius operculata, v. 3-4-5-locular. et fruct. drupaceus. Semina ∞ et reniformia, a latere v. dorso compressa, ovata v. oblonga, hilo ventrali, testa crustacea <, album. carnoso, embr. annulari, arcuato, terete, excentrico — v. recto, axili v. phyllolobo.—Spec. 1000?

a. *Cuscuteæ*: caule filiformi, fere aphyllo, volubili, ope haustoriorum parasitante; flor. 5-4-meris, glomeratis v. spicatis et schizostylis <, corolla marcescente, passim squamulis internis stipata, ovulis geminis collateral., erectis; capsula bilocularis, basi circumscissa, 4-2-sperma, embryone filiformi, indiviso, circa albumen carnosum spiraliter convoluto, radicula infera:—*Cuscuta*, *Lepidanche*.

b. *Solaneæ nob.* (Curvembryæ Miers.): embryo arcuatus, annularis v. spiralis; capsula, quibusd. operculata, v. bacca: — *Hyoscyamus*, *Anisodus*, *Scopolia*;—*Datura*, *Solandra*; — *Jochroma*, *Nicandra*, *Physalis*, *Sarracha*, *Witheringia*, *Capsicum*, *Solanum*, *Pionandra*, *Lycopersicum*, *Mandragora*, *Atropa*, *Salpichroa*, *Lycium*, *Dunalia*....

c. *Petunieæ nob.* (Rectembryæ Miers.): embryo fere rectus, brachylob. v. phyllolobus; ovar. quibusd. stipitatum; capsula v. bacca bilocularis, semina passim triquetra et pauca:— *Lehmannia*, *Nicotiana*, *Petunia*, *Vestia*;—*Fabiana*, *Nierembergia*;—*Cestrum*, (*Habrothamnus*); — *Sessæa*, *Metternichia*....

* *Nolanaceæ* Lindley. Hbæ ann, succulentæ v. frutices, fol. alt. integris, latis, linear. v. teretibus, flor. solitar. extraxillar., conspicuis v. parvis: calyx 5-partit., corolla infundibularis, plicata, 5-10-loba, 5-andra; ovaria 5-20 et plura, 1-6-locularia, toro carnoso excepta, synstyla, ovulis solitar. Nuculæ v. drupæ confertæ, 1-6-loculares; sem. reniform. albuminosa, embr. annulari (an famil. propria?): — *Nolana*, *Alona*, *Dolia*, *Sorema*, *Aplocarya*, *Alibrexia*, — *Grabowskya*?

FAM. 156. POLEMONIACEÆ *nob.* s. EUTOCACEÆ.

Hbæ ann. frutic. arbores, quædam volubiles et lactescentes, foliis estipul. sparsis<, integris, palmatis v. pinnatifidis. *Flores* monoclini, regulares, axillar. v. terminales, solitarii, cymosi, quibusd. glomerati v. scorpioideo-cymosi: sepala 5, ⊣— connata, nov. imbricatæ; corolla hypogyna, tubo brevi, amplo v. gracili, elongato, limbo 5-fido v. subintegro, novello imbric. v. contorto; stamina 5, corollæ innata et alterna, antheris normal. v. perischizis, basi-medifixis; torus hypogynus ⊣— manifestus. *Ovarium* e carpophyllis 2 - 3 - 4 - 5, 2 - 1 - 3 - 5 - loculare, columella septante ⊣— completa, ovulis solitar., geminis v. ∞, erectis v. pendulis, anatropis v. amphitropis. Capsula 1 - 4 - locular., 1 - 4 - ∞ - sperma, loculicida v. septifraga, rarius indehisc. v. baccata; testa crustac<, albumen copiosum v. parcum, durum v. mucilaginosum; embryo rectus v. curvatus, brachy-macrolobus.

a. *Hydrophylleæ:* hbæ americ., pilosæ<, foliis palmati-pinnatifidis; rarius integris, florib. scorpioideo-cymosis v. solitariis—axillaribus, passim c. parastemonibus 10; ovarium diphyllum, 1-loculare, ovulis 4 v. ∞, amphitropis, e placent. 2 parietalibus, stylo bifido; capsula rachicida, 2 - ∞ - sperma; semina angulata, hilo ventrali, testa crustacea, album. cartilagineo, embr. recto, minimo v. semilongo, brachylobo: — *Hydrophyllum*, *Nemophila*, *Ellisia*, *Eutoca*, *Phacelia* (*Aldæa*), *Emmenanthe*.... (Spec. 48).

b. *Wigandieæ* (*Hydroleaceæ*): hbæ, passim pilis viscidis

v. prurientib. obsitæ v. spinis axillarib. armatæ, foliis integris (dentatis), florib. axill. solitariis v. termin. scorpioideo-cymosis, ovario 2-3-phyllo, 2-1-3- loculari, schizostylo, ovulis ∞, anatropis, horiz. v. pendulis; capsula loculicida v. septifraga; sem. ∞, minuta, testa laxa, albumine carnoso, parco, embr. phyllolobo: — *Hydrolea*, *Wigandia*, *Nama*; — *Romanzovia*, *Codon*.... (Spec. 34).

c. *Polemonieæ:* hbæ—frutices, raro scand, foliis integris v. pinnati- et tripinnatisectis, rarius palmatis v. imis et oppositis; flores cimosi, thyrsoidei, corymbosi v. glomerati et involucrati, raro solitarii, ovario 3-2-5-phyllo, synstylo, ovulis solitariis, erect. anatropis v. ∞, biseriatis, introrsum amphitropis. Capsula 3-1-2-5-locularis, loculicido-septifraga, columellam septantem nudans; semina solitar. v. ∞, angulata v. compressa et alata, testa spongiosa, quibusd. marginata, hilo basil. v. ventrali, album. carnoso, embr. recto, subæquilongo, phyllolobo: — *Caldasia*, *Phlox*, *Collomia*, *Gillia* (*Leptosiphon*, *Ipomopsis*), *Polemonium*, *Cantua*, *Cobœa*.... (Spec. 105).

d. *Convolvulariæ:* hbæ—arbores, sæpe volubiles, lactescentes et radice tuberosa, foliis integerrimis, raro pinnatifidis, sæpius palmatis, cymis axillar. 1 - 3 - ∞ - floris; sepala 5 passim inæqualia, 1-2-3-seriata, raro connata, involucrata; corolla parva v. maxima, sæpius infundibularis et subintegra, plicata et tortilis, anther. perisehizis <; ovarium 2-3-4-phyllum, syn- v. schizostyllum, 2-1-3-4-loculare, rarius duplex v. 4-plex c. stylo gynophoriano (Erycibe—stigm. sess. 5-mer.); capsula 2-1-3-4-locular., 1-4-sperma, raro circumscissa v. baccata; albumen parcum, mucilaginosum <, embr. ⊣ — curvato, cotyledonib. foliaceis <, plicatis et corrugatis. (Dichondreæ, Convolvuleæ, Argyreieæ et Erycibeæ):—*Falkia*, *Dichondra*;—*Wilsonia*, *Cressa*, *Evolvulus*, *Breveria*; *Calystegia; Polymeria*, *Convolvulus*, *Jacquemontia*, *Ipomœa*, *Callonyction; Pharbitis*, *Batatas*, *Quamoclit; — Argyreia*, *Rivea; — Erycibe*. . . . (Spec. 725, Choisy et DC.).

## *Ordo IV. Verbenastra.*

Flores monoclini et 5-meri <, plerumque irregulares; stam. 1-cycla, didynama v. 2; ovar. plerumque diphyll., 1-4-locul.; nuculæ 4-2 v. capsula, bacca et drupa; sem. exalbumin. <. Folia sæpius opposita, quibusd. pinnatisecta et decomposita.

FAM. 137 ONOSMACEÆ *nob.* BORRAGINEÆ Juss.

Hbæ, frutic. arbores, passim hispidæ, foliis estipulat. sparsis, integris et sæpius integerrimis, raro suboppositis, ternis v. incisis. *Flores* monoclini <, regulares <, scorpioideo-cymosi; paniculati, corymbosi v. axillares solitarii: sepala 5-4, ⊣⊢ — connata, persist. et acrescentia <; corolla hypogyna, rotata v. tubulosa, 5-mera <, passim fornicibus, pilis v. parastemon. aucta, lobis novell. imbricatis; stamina isomera <, alterna, tubo corollæ innata, inclusa v. exserta, antheris normalib. basi-dorsifixis, quibusd. subcoalitis. *Gynœceum* lib. (diphyllum), carpellis 4 <, distinctis v. connatis, ovulis solitariis, anatropis, appensis, stylo terminali v. gynophorianos, stigm. simpl. v. bifido. *Nuculæ* 4 (2), *drupa* 4-1-8-sperma v. *bacca*; semen inversum, rect. v. arcuatum, albumine O v. parco, cotyledon. plano-convexis, radicula brevi <. — Spec. 1075.

a. *Borragineæ nob.* exalbuminosæ, utplurim. herbaceæ, stylo gynophoriano, nuculis 4, bigeminis v. 2: — *Myosotis*, *Bothriospermum*, *Lycopsis*, *Anchusa*, *Symphytum*, *Borrago*; *Nonnea*, *Craniospermum*, *Lithospermum*, *Amsinkia*, *Pulmonaria*, *Moltkia*, *Cerinthe*, *Onosma*, *Echium*.... *Rochelia*, *Echinospermum*, *Krynitzkia*, *Suchtelenia*, *Asperugo*, *Cynoglossum*, *Solenanthus*, *Rindera*, *Omphalodes*....

b. *Heliotropeæ* — exalbuminosæ, herbaceæ v. frutescentes, stylo subterminali, nuculis subcoalitis: — *Schleidenia*, *Heliotropium*, *Heliophytum* (*Tiaridium*).

c. *Ehretieæ:* — albuminosæ; frutices, quædam volubiles et arbores, raro hbæ, stylo terminali, drupa 4-sperma v. fructu 4-partibili, embryo brachylobus: — *Coldenia, Messerschmidia, Tournefortia, Beurreria, Rhabdia, Ehretia...*

d. *Cordieæ* — exalbumin.; frutic. v. arbores, ovario 2-4-8-loculari, stylo terminali, passim dichotomo, 2-4-8-stigmeo; drupa putamine 4-8-3-2-1-loculari, 1-8-spermo, v. bacca 2-4-sperma; cotiledones crassæ, plicatæ< (quibusdam folia incisa, flores abortivo-diclini, corolla 4-7-mera, stamina plura):— *Sacellium, Cordiopsis, Cordia, Varronia, Patagonula; Cortesia, Menais....*

FAM. 138. VERBENACEÆ. *nob.*

Hbæ, frut. arbores, passim aromaticæ et caule tetragono, foliis estipul., oppositis, raro verticillat. v. alternis, integris v. divisis, digitatis, pinnatis. *Flores* monoclini, irregulares<, axillares, cymoso-glomerati v. pedunculosi, spicati et thyrsoidei, raro solitarii: calyx liber., regularis, 5-merus v. labiatus, corolla hypogyna, limbo 4-5-mero, labiato v. subregulari, novello imbricato. Stamina tubo innata, inclusa v. exserta, 4 didynama v. duo (5), antheris normalib. v. arcuatis, unilocul.—v. loculis disjunctis et appendiculatis. *Ovaria* 4, gynophoro carnoso, styligero, passim lobato insidentia, stigmate sæpius bilobo,—v. ovarium symmerum, 2-4-phyllum et acrostylum; ovula solitaria, erecta, anatropa, rarius gemina, collateralia v. ascend. et amphitropa. — Cariopsides — nuculæ 4 v. abortu pauciores, raro baccantes, calyci +— — accrescenti inclusæ, v. drupa—bacca, 1-2-4-8-sperma. Semen erectum, raro ascendens, albumine subnullo, cotyledon. planoconvexis, rad. breviss. infera.— Familiæ 2 conjunctæ, ut pares sint Onosmaceis.

*A.* Labiatae s. Nepetaceae. Hbæ, frutices, fol. integris — serratis v. palmati-pinnatisectis, plerumque corollis bilabiatis et cymis glomeratis (verticillastra); stylus gynopho

rianus, ovula solitaria anatropa; carpella disjuncta, raro baccata. — Spec. 2350, in sectiones multas repetitas ab auctoribus—Bentham et Reichenbach divisæ:

1. *Menthoideæ:* — *Lycopus*, *Mentha*, *Preslia*, *Perilla*; *Elsholtzia*; *Pogostemon*, *Meriandra*....

2. *Satureinæ:* — *Satureia*, *Cuspidocarpus*, *Origanum*, *Majorana*, *Pycnanthemum*, *Bystropogon*; *Hyssopus*; *Collinsonia*, *Cunila*; *Monarda*, *Ziziphora*, *Faldermannia*...

3. *Nepeteæ:* — *Glechoma*, *Nepeta*, *Lophanthus*, *Lallemantia*, *Dracocephalum*, *Moldavica*....

4. *Stachydeæ:* — *Lamium*, *Galeobdolon*, *Wiedemannia*, *Lagochilus*, *Chaiturus*, *Leonurus*, *Galeopsis*, *Stachys*, *Betonica*;— *Burgsdorfia*, *Hesiodia*, *Sideritis*, *Lavandula*, *Marrubium*, *Ballota*, *Beringeria*, *Acanthoprasium*; *Leucas*, *Leonotis*, *Phlomis*, *Eremostachys*, *Moluccella*....

5. *Melissinæ:* — *Thymus*, *Thymbra*, *Micromeria*, *Acinos*, *Calamintha*, *Clinopodium*, *Melissa*, *Hedeoma*, *Gardoquia*...

6. *Ocymoideæ:* — *Hyptis*, *Marsypianthus*; *Ocimum*, *Moschosma*; *Anisochilus*, *Coleus*, *Plectranthus*....

7. *Salvieæ* Rchb.: — *Audibertia*, *Salvia*, *Rosmarinus*.

8. *Prasieæ* Rchb.: — *Prunella*, *Cleonia*, *Horminum*; *Melittis*, *Physostegia*; *Prasium*...

9. *Ajugoideæ:* — *Ajuga*, *Chamæpitys*, *Phleboanthe*, *Teucrium*, *Scorodonia*, *Amethystea*....

10. *Scutellarieæ:* — *Scutellaria*, *Hymenocrater*, *Holmskioldia*, *Perilomia*...

11. *Prostantheræ:* — *Chilodia*, *Prostanthera*, *Hemiandra*, *Westringia*, *Perowskia*....

*B.* Verbenaceae pyrenaceae s. verae. Hbæ, frut. arbores, foliis simpl. v. digitat. et pinnatis, raro sparsis; ovarium 2-4-phyllum, 2-4-8-locul. acrostylum, ovulis solitär. v. subascendentib. amphitropis, micropyle infera. Drupa 1-2-4-

pyrena, pyrenis 1-2-locular. maturis sæpe disjunctis, v. bacca 4-2-1-locularis; semina solitar. erecta v. ascend., albumine O v. parco. Spec. 610.

a. *Lippieæ* — schizocarpicæ: — *Verbena (Stachytarpheta), Lippia, Aloysia, Caryopteris?, Monochilus, Priva.....*

b. *Lantaneæ* — drupa indehiscente: — *Spielmannia, Lantana, Vitex, Premna; Tectona, Gmelina, Cytharexylon, Volkameria, Clerodendron, Duranta, Petræa?....*

c. *Aegiphileæ* — baccatæ: — *Amasonia, Callicarpa, Aegiphila, Cornutia....*

d. *Avicennieæ:* arbores maritimæ, flor. 4-meris, ovario biloculari, ovulis bigeminis, collater. pendulis, amphitropis; bacca coriac. bivalvis, monosperma, embr. in fructu germinante, cotyled. latissim. conduplicatis: — *Avicennia.*

### FAM. 139. ACANTHACEÆ.

Hbæ, frutic. arbusculæ, nodoso-articulatæ, foliis estipulatis, oppositis, ternis et quaternis, integris, integerr. dentatis v. spinoso-sinuatis. *Flores* monoclini, irregulares, axillar. v. terminales, cymoso-spicati, fasciculati, rarius solitarii, passim bracteati et bracteolati: sepala 5-4, ⊣— connata v. subnulla, passim inæqualia, nov. imbricata; corolla hypogyna tubulosa, limbo 5-5-fido, 1-2-labiato, raro regulari, novello imbricato v. contorto. Stamina e tubo 4 didynama, c. rudimento quinti < v. 2 postica, antheris normalib. v. loculis divaricatis, horizontal. v. verticalibus, altero sæpe abortivo. *Ovarium* e carpophyllis 2, antico et postico, biloculare, synstylum, ovulis geminis v. pluribus, centralibus, amphi- v. campylotropis, utplurimum processu placentari bracteolatis. *Capsula* bilocularis, quibusd. gynopodiata v. abortuu nilocul., bivalvis, loculicida; semina globosa v. compressa (raro in loculis solitaria), bracteolæ uncinatæ (retinaculo) v. cupulari insidentia <, exalbuminosa, embr. curvato v. recto, cotyledonib. magnis,

suborbiculatis, crassiusculis v. contortuplicatis. Spec. 750. — Divisio sec. Nees ab Esenbeck.

a. *Thunbergieæ:* retinacula seminum cupulata, cornea: — *Thunbergia, Meyenia, Hexacentris.*

b. *Nelsonieæ:* retinacula papillæformia: — *Elytraria, Nelsonia, Adenosma, Gymnacánthus....*

c. *Echmacantheæ:* retinacula subulata v. elongata: — *Hemiadelphis, Hygrophila; — Dipteracanthus, Ruellia, Strobilanthus, Goldfussia; — Asteracantha, Barleria, Geissomeria, Lepidagathis; — Blepharis, Acanthus; — Crossandra, Aphelandra, Cryptophragmium; Rostellularia, Graptophyllum, Beloperone, Adhatoda, Gendarussa; Eranthemum, Justicia, Rhinacanthus; — Dicliptera, Peristrophe, Hypoestes; — Andrographis.....*

FAM. 140. BIGNONIACEÆ s. MARTYNIACEÆ.

Hbæ, frutic., sæpe volubiles v. scand. et arbores, foliis estipul. oppositis, rarius sparsis v. ternis, simpl. — digitatis, pinnatis et supradecompositis, passim cirrhiferis. *Flores* monoclini, irregulares <, terminal. v. lateral., cymoso-racemosi thyrsoidei v. solitarii: calyce 5-mero, quibusd. bilabiato,, spathaceo, integro v. bracteato; corolla hypogyna, tubuloso-campanulata, limbo 5-mero ($\frac{2}{3}$), irregulari et nov. imbric. < Stamina alterna, 4 didynama (5-to utplurim. abortivo, raro plura) v. 2, antheris normalibus; loculis passim divaricatis et glandula terminali. *Ovarium* e toro hypogyno annulari, diphyllum, synstylum, 1-2-4-loculare, placenta parietali fenestrata v. latminari septante aut columnari tetragona; ovula anatropa, ∞ <, 1-4-seriatim extra v. intra placentam inserta, horizontal., rarius pendula v. e basi ascendentia. *Capsula* coriac. v. lignosa, 1-2-4-locularis, sæpe compressa, siliquæformis, margini — rachicida, rarius septicida v. indehiscens, drupacea, oligosperma et 8-locularis (ex ovario 4-phyllo). Semina ∞ <,

alata v. aptera et tegmine crasso prædita, exalbum., cotyledonibus sæpe foliaceis, reniformibus, raro amygdalinis. — Spec. 520 ?

a. *Martynieæ (Pedalineæ).* Hbæ, frutic., foliis integris angulat. v. sinuatis; ovar. 2-4-phyll., 1-4-8-loculare, ovul. paucis v. solitariis; fructus capsularis septicidus v. drupaceus, sæpe cornutus v. aculeatus, 1-2-4-8-locul., indehisc. v. cortice valvatim soluto et putamen integrum, loculosum, basi v. axi perforatum nudante; semina in loculis pauca v. solitaria, aptera, testa solida v. laxa reticulata, embr. amygdalino : — *Craniolaria, Martynia, Pedalium, Josephinia...*

b. *Sesameæ.* Hbæ annuæ < caule 4-gono <, foliis dentatis, angulat. v. trifidis, florib. axill. solitariis ; capsula 4-locularis septicide-bivalvis, 2-4-cornis, placenta columnari 4-gona, seminib. ∞ adscend. v. horiz., apteris v. marginatis: — *Sporledera, Ceratotheca, Sesamopteris, Sesamum.*

c. *Incarvilleæ.* Hbæ, frutic., passim scandentes, foliis opposit. v. alternis, 1-2-3-pinnatis, 1-4-jugis, passim cirrhiferis; flores racemosi; capsula unilocul. v. subbi - quadri - locularis, valvis 2, placentam fenestratam, ventralem, intus seminiferam, bipartitam, orthospermam auferentibus — v. integram, cremospermam (Tourretiæ 4-alatam) nudantibus ; sem. alata; — *Tourretia; Incarvillea, Amphicome; Friedericia, Eccremocarpus, Calampelis.*

d. *Bignonieæ* (Fenzl, excl. Tourretieis). Frutic. arbores raro hbæ, foliis oppos. < integris — tripinnatis, passim cirrhiferis, florib. cymoso-racemosis v. thyrsoideis; capsula bilocu, laris, loculi — v. marginicida, septo placentari contrario v. parallelo, extus seminifero; semina alata, raro aptera: — *Argylia; — Jacaranda, Distictis, Platycarpum, — Zeyheria, Rhigozum, Tecomaria.., Tecoma, Sparattosperma, — Catalpa; Stereospermum. — Adenocalymna, Amphilophium, Aplolophium, Lundia, Bignonia, Millingtonia, L. f...*

Sectio III. Dialypetalae s. Petaliflorae.

Flores plerumque completi et petala disjuncta, raro coalita.

## Classis XI. Calycanthae.

Flores epi-perigyni, dialypetali (anthemium tubo calycis v. toro epigyno adnatum), quibusdam incompleti v. parastemonibus aucti; folia sæpe stiqulata.

### *Ordo I. Araliastra.*

Flores plerumpue epigyni, quibusd. apetali v. diclini, stamina utplurim. monocycla, ovula sæpius solitaria et pendula, sem. albuminosa <. In nonnullis notæ Coccospermarum et Amentacearum.

FAM. 141. UMBELLIFERÆ.

*D.* Hbæ annuæ v. perennes, passim giganteæ v. fruticosæ, caule nodoso, medulla evanida v. ampla et fibrifera. Folia alterna sæpius pinnatisecta v. fissa et petiolo basi vaginante, quibusdam ima, opposita, integra v. abortiva — ad vaginas v. phyllodia reducta. *Flores* mono-diclini, in umbellas compositas, simplices v. capitatas redacti, sæpe involuero communi et partialibus prædiți: calyx adnatus, limbo 5-mero v. obsoleto; petala 5 e toro epigyno, passim biloba, obcordata, apice inflexa et inæqualia — versus peripheriam majora, novella subvalvata; stamina 5, alterna, nov. replicata, antheris normalibus. *Ovarium* biloculare, distylum, raro uniloculare; ovula solitaria, pendula, anatropa. *Amalthœa* disperma <, plerumque jugis 10 primariis (e suturis et nervis mediis sepalorum oriundis) vel et secundariis 8 (nervi sepalorum laterales), varie figuratis, v. his vel illis obsoletis, ac vittis (lacunæ diploës balsamiferæ) plus minus numerosis, insignis, bipartibilis, hemicarpiis (raro solitariis v. arcte connatis) ex

axi stylifero (carpophoro) sæpe bifido pendulis. Semen albumine carnoso v. subcorneo, tereti, plano-convexo v. angulato, aliis conduplicato v. concavo-arcuato, embryone brevi, parvo, apicali, radicula supera. — Spec. 1500 + 160.

*A.* Orthospermae: albumine tereti, plano-convexo v. angulato.

a. Anomalæ: umbellis simpl. v. imperfectis et fructu evittato <.

1. *Spananthcæ nob.*, fructu didymo v. biscutato: — *Hydrocotyle*, *Crantzia*, *Didiscus*, *Trachymene*, *Astrotricha*, *Leucolœna (Xanthosia)*, *Bowlesia*, *Azorella*,.... *Bolax*, *Mulinum*, *Diposis*, *Spananthe*....

2. *Saniculeæ*, fructu ovato: — *Actinotus*, *Klotzschia*, *Sanicula*, *Hacquetia*, *Astrantia*, *Eryngium*, *Hohenackeria*....

*b.* Normales s. Perfectæ: umbellis compositis et fructu vittato <.

3. *Ammineæ*: fruct. subdidymus, jugis 10 æqualibus, filaribus v. alatis: — *Rumia*, *Cicuta*, *Zizia*, *Apium*, *Petroselinum*, *Wydleria*, *Trinia*, *Helosciadium*, *Discopleura*, *Critamus*, *Sison*, *Schultzia*, *Ammi*, *Aegopodium*, *Carum*, *Lomatocarum*, *Bunium*, *Chamæsciadium*, *Cryptotœnia*, *Pimpinella*, *Berula*, *Sium*, *Bupleurum*, *Führnrohria*...

4. *Seselineæ:* fruct. ovatus, rarius a dorso compressus, jugis subæqualib., filaribus, alatis v. crassis: — *Oenanthe*, *Scleroscíadium*, *Aethusa*, *Soranthus*, *Seseli*, *Cenolophium*, *Libanotis*, *Cnidium*, *Athamantha*, *Ligusticum*, *Silaus*, *Meum*, *Neogaya*, *Conioselinum*, *Crithmum*.... *Krubera*, *Pachypleurum*, *Phloiodicarpus*, *Stenocoelium*....

5. *Angelicæ:* fructus a dorso compressus, 4-alatus: — *Levisticum*, *Selinum*, *Czerniaëvia*, *Gomphopetalum*, *Ostericum*, *Angelica*, *Archangelica*.

6. *Peucedaneæ:* fruct. a dorso compressus, marginatus: — *Opopanax*, *Ferulago*, *Ferula*, *Dorema*, *Eriosynaphe*, *Peucedanum*, *Xanthogalum*, *Callisace*, *Bubon*, *Anethum*, *Hammatocaulis*, *Capnophyllum*, *Tiedemannia*, *Archemora*, *Pastinaca*, *Symphyoloma*, *Heracleum*, *Barysoma*, *Zosimia*, *Polytænia*, *Johrenia*.... *Hasselquistia*, *Tordylium*..

β. Multijugatæ: jugis primariis et secundariis.

7. *Silerinæ nob.:* fruct. a dorso v. latere compressus, jugis secundar. filarib. gracilior. v. validioribus: — *Agasyllis*, *Siler*, *Golbanum*, *Ormosolenia;* — *Cuminum*, *Froriepia*, *Trepocarpus.*

8. *Daucineæ nob.:* fruct. a dorso compressus v. subovatus, jugis secundar. 4 exteriorib. v. omnibus alatis v. aculeatis: — *Thapsia*, *Cymopterus*, *Laserpitium*, *Lophosciadium*, *Melanoselinum;* — *Artedia*, *Orlaya*, *Daucus.*

B. Solenospermae: albumine intus sulcato v. canaliculato:

a) Multijugatæ.

9. *Elæoselineæ:* fruct. a dorso compress. v. subovatus, jugis 14 filaribus, 4 secund. exteriorib. alatis: — *Elæoselinum*, *Margotia.*

10. *Caucalineæ:* fruct. a latere contract. v. subovatus, jugis omnib. aculeatis v. pilosis, secundariis validioribus: —, *Szovitsia*, *Caucalis*, *Turgenia*, *Torilis.*

b) Paucijugatæ.

11. *Scandicinæ:* fruct. a latere compress. v. contractus sæpe elongatus et rostratus, jugis 10 filar. alatis v. obsoletis:— *Scandix*, *Anthriscus*, *Chærophyllum*, *Sphallerocarpus*, *Molopospermum*, *Myrrhis*, *Osmorrhiza*, *Grammosciadium*....

12. *Smyrnieæ:* fructus turgidus subdidymus: — *Lagoecia*, *Anisosciadium*, *Echinophora*, *Arctopus*, *Cachrys*, *Prangos*, *Lecockia*, *Hermas*, *Petrocarvi*, *Conium*, *Arracacha*, *Pleurospermum*, *Coelopleurum*, *Hansenia*, *Malabaila*, *Aulacosper-*

*mum*, *Physospermum*, *Eleutherospermum*, *Smyrnium*, *Scaligeria*. . . .

*C.* Coelospermae: semine concavo-arcuato.

13. *Coriandreæ:* fruct. globosus v. didymus, jugis 10 v. 18: — *Cymbocarpum*, *Bifora*, *Astomœa*, *Atrema*, *Schrenkia*, *Cryptodiscus*, *Coriandrum*...

*D.?* Araliaceae: Umbelliferæ nobiliores, passim arborescentes v. scandentes, foliis simpl. v. compositis, vix vaginantibus, umbellis v. capitulis sæpe racemosis, petalis et staminib. 5-10 — pluribus, ovario 2-15-loculari, di-polystylo; *amalthœa* 2-15-locularis, integra, sæpe baccata v. nuculifera, embryone longiori. Tribus an familia artificialis? — *Adoxa*, *Panax*, *Cussonia*, *Gilibertia*, *Gastonia*, *Aralia*, *Hedera*, *Paratropia*, *Arthrophyllum*. . . . *Decostea?*

FAM. 142. BRUNIACEÆ.

Frutices ericoidei, foliis estipulatis, sparsis v. confertis, angustis, subtrigonis. *Flor.* monoclini, parvi, capitati v. spicati, 5-4-meri, sepalis et petalis nov. imbricatis, antheris (5-4) normal., basi-dorsifixis. *Ovarium* innatum (quibusdam solo toro, nec calyci) v. semiliberum, 2-1-3-phyllum, *Thamnsæ* 5-phyllum, eseptatum, placenta axili, 10-ovulata, — hinc 2-3-1-loculare; ovula solitaria v. gemina, appensa; styli +— connati. *Amalthœa* sæpius dicocca et disperma, quibusdam dehiscens, v. *fructus liber;* albumen carnosum, embryo minutus brachylobus — (an tribus Cornacear.?). Spec. 65. — *Berzelia*, *Brunia*, *Raspailia*, *Staavia*, *Linconia*, *Audouinia*, *Thamnea*,...

FAM. 143. CORNACEÆ.

Fruticuli-arbores, foliis estip. oppositis, raro alternis, integris (serratis <). *Flor.* mono-diclini, parvi, cymosi, passim glomerati et involucro colorato, magno <: calyx adnatus, limbo 4-5-mero; petala alterna, nov. valvata <, stam. monocycla, antesepalina, antheris normalib. dorsifixis; quibusdam

flores epiphylli (Cornus canad., Helwingia), dioeci, apetali, diplostemones. *Ovarium* 2-3-1-locul., synstylum <, toro epigyno, ovulis solitariis, pendulis, anatropis. *Amalthecæ* drupaceæ v. nuculiferae, discretæ v. connatæ (sorosus); sem. solilaria, testa coriacea, album. carnoso; embryo æquilongus < phyllolobus, rad. supera. — Spec. 50?

a. *Grubbieæ*, stenophyllæ, apetalæ, diplostemones, micrembryæ: — *Grubbia*, *Ophira*.

b. *Corneæ*, fol. elliptic. v. lanceol., stam. monocyclis: — *Cornus*, *Benthamia*, *Curtisia*; — *Aucuba*, *Mastixia*? *Corokia*.

c. *Helwingieæ*, fol. altern. stipulatis, flor. dioecis, apetalis, epiphyllis, 3-4-meris: — *Helwingia*.

FAM. 144. PARROTIACEÆ.

Frutic. arbores, pube stellata <, foliis stipulatis et alternis <, integris, passim costatis, nervosis, sinuoso-dentatis v. sublobatis. *Flor.* monoclini, axill. v. term., cymosi — glomerati v. spicati, quibusd. præcoces v. polygamo-dioeci: calyx +— adnatus, lobis 4-5, nov. valvatis <, v. truncatus 5-7-10 denticulatus; petala 0 v. alterna, passim spathulata v. linearia et tortilia. Stamina monocycla sepalina, sæpe parastemonib. petalinis aucta, brevia, v. elongata et polycycla, antheris valvatis, perischizis, campyloschizis v. normalib. *Ovarium* biloculare et distylum <, ovula anatropa, pend. solitaria, in Bucklandia ovulis imperfectis superis 5 aucta. *Amalthæa* v. *capsula* semilibera, coriacea v. sublignosa, bilocularis, disperma (c. paraspermiis), apice septi — et rachicida, endocarpio elastice solubili (Alangieis amalth. drupacea 1-2-sp.). Sem. nitida, albumine carnoso, oleoso v. subcartilagineo; embryo subæquilongus, phyllolobus. — Spec. 24?

a. *Hamameleæ*: ovula solitaria, flor. 4-5-meri, completi, stamina 1-cycla c. parastemon. <: — *Trichocladus*, *Dicoryphe*, *Corylopsis*, *Hamamelis*...

b. *Fothergilleæ*: ovula solitar., flor. apetali, calyce 5-7-mero, stam. 1-∞-cycla: — *Parrotia*, *Fothergilla*.

c. *Bucklandieæ:* ovula fertilia solitaria, imperfectis 5 aucta, flor. polygamo-dioeci, stam. 10-14, sem. acroptera: — *Bucklandia*.

d. *Alangieæ*. Arbores indicæ, fol. estip., flor. monoclinis, calyce adnato, 5-10-v. 6-8-dentato, petal. totid. alternis, linear. nov. convolutivis; stam. 1-2-4-cycla, antheris adnatis, normal. elongatis, lib. v. coalitis; ovarium 1-2-locul., monostylum, ovula solitar. anatropa pend.; amalthæa drupacea 1-2-sperma: — *Marlea*, *Alangium*.

### FAM. 145. RHAMNACEÆ.

Frutic. arbores (hbæ), quædam scandent., cirrhosæ v. spinescentes, foliis, bistipulatis <, alternis v. oppositis, integris, passim serratis, costatis, triplinerviis, interdum minim. v. abortivis. *Flores* monoclini < regular. minuti, axillares <, cymoso-solitar. v. glomerati, fasciculati, spicati: calyx 5-4-fidus, ⊣— adnatus, nov. valvatus; torus epi-perigynus; petala O v. 5-4, alterna, cucullata v. plana. Stamina antepetalina-monocycla, brevia, antheris dorsifixis, ovatis peri-v. campyloschizis, polliniis ellipsoid. unisulcatis. *Ovarium* innatum v. semiliberum, 3-2-4-loculare, stylis ⊣— connatis, ovulis solitar. (2), anatropis, erectis. *Amalthœa* v. *fructus liber*, calyce stipatus, 3-2-1-locular., drupaceus, samaroideus v. 2-3-coccus, apice v. basi dehiscens, cocci quibusdam ex axi penduli. Semina lævia, funiculo cupulari <, albumine carnoso, parco, flavescente, laterali, raro O, cotyledonib. viridesc. plusminus carnosis, rad. brevi, infera. — 250. Spec.

a. *Gouanieæ:* frutic. inermes, cirrhosi v. hbæ, amalthæa sicca, aptera v. alata, coccis endoschizis: — *Crumenaria*, *Reissekia*, *Gouania*, *Helinus*..

b. *Phylliceæ:* frutic. inermes, passim ericoidei, fol. altern. amalthæa sicca aptera: — *Walpersia, Phylica, Soulangia, Cryptandra.... Pomaderris, Trymalium.*

c. *Rhamneæ:* frut. arb., fol. altern. (v. oppos.), nuce, drupa v. capsula liberis v. semiliberis: — *Ventilago, Paliurus*; — *Zizyphus, Condalia, Berchemia, Hovenia, Rhamnus, Noltea, Ceanothus, Colubrina, Alphitonia...*

d. *Colletieæ:* frutices, ramis spinesc., foliis decussatis v. subnullis; fructu sublibero, sicco, aptero: — *Colletia, Discaria, Adolphia, Retanilla...*

## *Ordo II Portulacastra.*

Gynocceum 1-20-phyllum, calyci 2-20-mero innatum v. liberum, sæpius eseptatum; ovula 1-∞, funiculis liberis v. in placentas pariet. v. centrales coalitis; anthemium passim depauperat. v. exuberans; sem. albuminosa <. Habitus et flores valde variabiles.

### FAM. 146. PORTULACACEÆ.

Herbæ ann. v. perennes et frutices, foliis alternis v. oppositis, basi connatis, fasciculato-subverticillatis, plus minus carnosis; stipulæ O v. scariosæ, setaceo-fimbriatæ. *Flores* monoclini, term. v. axill., cymoso-solitarii, fasciculati v. racemosi. Calyx lib. v. adnatus, sepalis 4—— connatis, 2-5, persist. v. deciduis, novellis imbricatis, passim concavis, carinatis v. mucronatis; torus epi-perigyn. v. obsoletus. Petala O v. 3-4-6—plura, magna v. minima, quibusdam basi coalita. Stamina hypo-peri-epigyna, mono-polycycla v. pauca, antheris normalibus. *Ovarium* sessile liber. v. innatum, 1-20-loculare, stylis totidem, ovulis amphitropis, solitar. v. confertis, funiculis longis v. brevib., liberis v. in placentam centralem connatis, ramis liberis v. parietibus ovarii adnatis. *Utriculus, pyxidium, capsula* v. *amalthæa* 1-20-locularis, loculicida <,

2-∞-sperma. Semina lenticularia, reniformia v. pyriform., testa sæpius crustacea, albumine farinaceo v. subcarnoso, raro O. Embryo extrarius, ⊣— curvatus v. annularis, — Spec. 760?

*A.* Paronychiariae. Hbæ v. fruticuli (ramosissimi), foliis oppos. v. altern., ut plurimum scarioso-stipulatis, florib. parvis, perigynis <: sepala 5, ⊣— connata, sæpe dura, raro 3-4, v. inæqual. et baccantia; petala alterna, passim minima v. O; stamina antesepalina, monocycla, quibusd. 1-2-10 et petalina; ovar. lib. 1-loculare, 1-∞-ovulat., raro 5-loculare. Utriculus, nucula v. capsula unilocul., 3-5-valvis, polysperma, raro 5-locularis.

a. *Scleranthеæ:* fol. opposita, estipul.; stam. perigyna, ovula 1-2, utriculus 1-sperm. in calyce indurato: — *Mniarum, Scleranthus, Guilleminea; Habrosia.*

b. *Illecebreæ:* sæpius oppositifoliæ, calyce libero 3-5-fido, demum indurato, mucronato <; ovula 1-2, styli 2-3-1, utriculus basi dehisc. <: — *Herniaria, Illecebrum, Cardionema, Paronychia.... Pteranthus, Cometes.*

c. *Telephieæ:* alternifoliæ <, ovulum 1 v. plura in ovario basi 3-4-loculari, utriculus v. capsula polysperma: — *Corrigiola, Telephium.*

d. *Sperguleæ nob.*, fol. oppos. v. subverticillatis, capsula 1-5-loculari, polysperma <, v. utriculus in calyce baccato: — *Pollichia; — Loefflingia; — Cerdia, Polycarpon, Arversia, Ortegia, Polycarpæa, Spergularia, Spergula, Drymaria....*

*B.* Sesuviariae (Portulaceæ). Hbæ ann. — frutices, fol. altern. v. oppositis, florib. parvis v. magnis: sepala 2-5, plus minus connata; petala 3-7, fugaciss. v. mox apice contorta et gelatinoso-confluentia, sæpe O; stamina intersepalina v. antepetalina, singula v. fasciculata (∞-cycla); ovarium rarius innatum, 1-9-loculare, 1-∞-ovulatum; capsula loculicida, pyxidium v. amalthæa 1-9-locularis.

a. *Mollugineæ:* sepala 5 (4), petala O v. ∞?, ovar. liber. 1-5-loculare, 1-∞ -ovulatum; utriculus v. capsula loculicida: — *Adenogramma;* — *Acrosanthes*, *Schiedea*, *Colobanthus*, *Cœlanthum*, *Psammotropha*, *Pharnaceum*, *Mollugo*, *Glinus*, *Orygia*....

b. *Calandrinieæ:* sepala 2 (3), petala libera v.connata (O), ovul. 1-∞; capsula unilocul. valvata v. utriculus: — *Calyptridium*, *Montia*, *Monocosmia*, *Claytonia*, *Calandrinia*, *Talinum*, *Grahamia*, *Anacampseros*.... *Portulacaria.*

c. *Sesublieæ:* calyx 5-2-fidus, liber v. adnatus, petala O v. 4-7; pyxidium 1-5-loculare, polyspermum v. utriculus: — *Cypselea*, *Pyxipoma*, *Sesuvium*, *Diplochonium*, *Trianthema*, *Thelygonum*, *Portulaca*.... *Basella*, *Anredera*, *Boussingaultia?*

d. *Galenieæ:* calyx lib. v. adnatus; nucula, capsula loculicida v. amalthæa 1-9-locularis, semina solitaria v. gemina pendula: — *Polpoda*; *Plinthus*, *Galenia*, *Aizoon*; *Tetragonia?*

*C.* Ficoideae. Fruticuli succulenti v. hbæ, foliis estipul. opposit. v. alternis; flor. speciosi, heliophili: calyx adnatus, lobis 5-2-8, nov. imbric., petala et stam. multa, uni-multiseriata. *Ovaria* 4-20, ad axin crassum stigmophorum verticillata, subhorizontalia et connata, carpophyllorum marginibus superis ⊣— introflexis, costis inferis ovuliferis. *Amalthæa* drupacea, depressa, acromphalo lato, rimis 4-20 radiantibus dehiscente, loculis totidem polyspermis; sem. funiculata, pyriformia, curvembrya, album. ⊣— copioso, farinaceo: — *Mesembryanthemum* (spec. 300? capenses<).

*D.* Neuradeae. Hbæ basi lignosa, foliis stipulatis, alternis, pinnati-et bipinnatifidis; calyx tubo brevi, demum adnato, 5-merus, nov. imbricat., petala 5 alterna, stam. 10-20; ovaria 3-5-10, plus minus coalita. Amalthæa depressa, 5-10-locular., carpophyllis intus liberis et hiantibus; semina solitaria pend. exalbum., e funiculis ascendentibus, embryo curvatus, phyllolobus: — *Neurada*, *Grielum.*

FAM. 147. CRASSULACEÆ.

Hbæ annuæ — frutices, foliis estipul. sparsis v. oppositis, carnosis, integris, raro ternatis v. pinnatis. *Flores* monoclini et regulares <, cymoso-racemosi v. solitarii, axillares, vix perigyni: sepala 5-3-20, plus minus connata, persist., nov. imbricata <, petala alterna totidem, raro plura, libera v. — connata in corollam tubulosam staminigeram, nov. imbricata. Stamina mono-dicycla, antheris basifix. normalibus?. *Ovaria* 3-20, sepalis alterna, follicularia, haplostyla, libera v. connata, sæpius squamulis hypogynis singulis stipata; ovula ventralia, anatropa, ∞ v. pauca, biseriata, horizont. v. pendula <. *Folliculi* 3-20, liberi, rarius in *capsulam* loculicid. v. omni circumferentia apertam coaliti; semina ∞ < minuta, testa membran., albumine carnoso parco v. subnullo; embryo teres, brachylobus. — Spec. 450?

1. *Cephaloteæ:* Hbæ Novæ Holl. subacaules, foliis confertis, ellipticis v. ascidiomorphis, scapo simplici, thyrso gracili e cymis 4-5-floris, apetalis, calyce 6-fido, nov. valvato; stamina 12 e toro perigyno hispido, antheris didymis, connexivo globoso, crasso. *Ovaria* 6, ovulis solitar (2) erectis; *nuculæ* 6 monospermæ <, calyce et stamin. stipatæ, album. carnoso-oleoso, micrembryo: — *Cephalotus.*

2. *Crassuleæ*: syncyclio 3-20-folliculari:

*a.* Isostemones dialypetalæ: — *Tillæa, Dasystemon, Septas, Crassula, Globulea.* — Synpetalae: *Thusantha, Grammanthes, Cyrtogyne, Rochea.*

*b.* Diplostemones synpetalæ: — *Kalanchoë, Bryophyllum, Cotyledon, Pistorinia, Umbilicus, Echeveria.* — Dialypetalæ: *Sedum, Aithales, Sempervivum.*

3. *Diamorpheæ:* hbæ fol. alternis, flor. 4-5-meris; folliculi basi v. perfecte connati in capsulam 4-5-cornem: — *Diamorpha, Penthorum.*

? *Fouquiereæ:* Frut. arbores mexicanæ, spinis hypophyllis, fol. integris, sparsis v. fasciculatis, florib. terminal. spicat. v. paniculat. coccineis: sepala 5 imbricata, corolla synpetala, limbo 5-mero, stam. 10-12 exserta, gracilia, antheris ovatis. *Ovarium* (Fouquieræ) subtriloculare, synstylum, septis 3 incompletis, ovulis 18 biseriat., adsc. atropis?. *Capsula* (Bronniæ) oblongo-trigona, trilocularis, loculicida, kionide 3-gona, 3-sperma; semen pendul. compresum, peripterum, albumine parco, cotyled. cordato-ovatis, rad. breviori, infera: — *Fouquiera*, *Bronnia*.

FAM. 148. OPUNTIACEÆ S. CACTEÆ.

Plantæ carnosæ, quædam lactescentes, fruticosæ et arborescentes, caule discoideo, globoso, cylindrico, angulato v. compresso, cortice crasso, fasciculis ligneis disjunctis v. in lignum solidum medullosum compactis. Foliorum et ramorum evolutio sæpius supressa; quibusdam folia mammillaria, apice aculeato-barbata,—aliis caduca, conica v. persistentia, legitima, integra, sparsa (= Sedo); plurimis tubercula spinigera et villosa, e foliis v. ramis axillaribus abortivis orta. *Flores* solitarii, raro cymoso-conferti, terminales v. ex axillis mammillarum v. foliorum oriundi, epigyni, sepalis, petalis et staminib. indefinitis <, basi conferruminatis, inæquilongis, pluriseriatis, imbricatis, superne +— discretis et in perigonium subduplex, rotatum v. tubatum, sæpe magnum, dispositis. *Ovarium* 1-3-loculare, placentis 3 v. pluribus parietalibus <, stylo elongato, tubuloso v. farcto, 3 - ∞ - stigmeo, ovulis ∞, anatropis, horizontalibus. *Amalthæa* baccata lævis v. sepalis adnatis, miticis v. spini — setigeris exasperata, eseptata; < semina ∞, nidulantia, subglob. v. oblonga, testa dura, nigra; embryo vix albuminosus, rectus v. curvatus, cotyledon. liber. v. connatis. — Spec. 500.

a. *Melocacteæ*: truncus globos. v. cylindricus, quibusd. cephalio terminatus v. lactescens, axi ligneo medullifero

destitutus, phyllodiis apice spinigeris, spiraliter seriatis, distinctis v. in costas verticales coalitis; flores axillares trunci v. cephalii, perigonio campanulato, glabro, vix squamato, limbo patulo; bacca oblonga, glabra: — *Mammillaria*, *Anhalonium*, *Melocactus*.

b. *Astrophyteæ nob.:* truncus discoideus, globos. v. elongatus, strict. v. laxus, simpl. v. ramosus, phyllodiis in costas v. angulos verticales conferruminatis, axillis spinigeris, partim v. in cephalio lanato floriferis: perigonium campanulare v. infundibulare, + — squamatum et aculeatum; bacca oviformis, squamosa, setosa v. aculeata: — *Discocactus*, *Echinocactus;* — *Astrophytum*, *Echinopsis*, *Pilocereus*, *Cereus*.

c. *Phyllocacteæ:* caulis teres, pseudoparasit., ramis phyllomorphis, passim articulatis, phyllodiis distichis conferruminatis, axillis (crenis) ramorum primitus setosis; flores axill. v. termin., perigonio tubuloso, remote-squamato, limbo regulari v. obliquo; bacca costata, lævis<, rubra: — *Phyllocactus*, *Epiphyllum*.

d. *Opunticæ nob.* frut. passim pseudoparasit. v. arbores, axi ligneo terete, ramis teret., angulatis v. alatis et articulatis; folia O, caduca teretia v. durabilia elliptica, alt. v. oppos., villi et aculei axillar., evanidi v. persistentes; flores axill. v. termin., solitar., v. cymosi, limbo perigonii rotato; bacca lævis v. squam., aculeata et setosa: — *Rhipsalis*, *Lepismium*, *Hariota;* — *Opuntia;* — *Pereskia*.

### FAM. 149. SAXIFRAGACEÆ.

Hbæ frutic. arbores, foliis sparsis v. oppositis, integris v. pinnatisectis, quibusdam stipulatis. *Flores* plerumque monoclini, cymoso-heterotaxi: sepala 5-5-10, plus minus inter se te cum ovario connata; petala basi calyci innata, alterna, quibusdam inæqualia v. O; stamina alterna, mono-dicycla v. plura, antheris normalib., raro poroschizis. *Ovarium* 2-5-10-

phyllum, stylis liberis v. coalitis, septis ⊣— completis, ovulis anatropis, horizont. adscend. v. pendulis, confertis, raro solitariis. *Capsula* v. *amalthæa* poly-oligosperma, quibusdam baccata; embryo albumini carnoso v. corneo subæquilongus v. parvus. Spec. 640.

A. Alternifoliæ — plerumque

1. *Francoeæ*: hbae foliis lyratis v. orbicularibus, flor. racemosis, 4-meris, passim irregularibus, staminib. et parastemonib. 8 (12), ovario libero 4-loculari, ∞-ovulato, capsula loculicida: — *Francoa*, *Tetilla*.

2. *Saxifrageæ*. Hbae, frut., fol. altern. v. oppositis, stipulis 0 v. petiolo adnatis, calyx ⊣—adnat. 4-5-merus, stam. 1-2-4-cycla, ovar. 1-2-5-locul., capsula septicida <: — *Eremosyne*, *Zahlbrucknera*, *Saxifraga*, *Leptarrhena*, *Lütkea*; — *Chrysosplenium*, *Heuchera*, *Mitella*, *Tellima*, *Tiarella* *Hoteia*, *Neillia*, *Astilbe*.

3. *Ribesieæ*. Frutices passim spinosi, foliis alternis v. fasciculatis, estipulatis <; calyx adnatus 5-4-fidus, petalis minutis, stam. monocyclis; placentæ 2-3-4 parietales; amalthaea baccata, arillo gelatinoso, embr. minimo: — *Ribes*, *Robsonia*.

4. *Escallonieæ*. Frutic. arbores, folliis alternis, simpl. estipul., pet. et stam. 5-6, ovarium innat. v. liberum, stylis 2-5 coalitis: — *Carpodetus*; — *Escallonia*, *Quintinia*, *Itea*, *Anopterus*, *Polyosma*.

B. Oppositifoliae.

5. *Bauereæ*. Frutices, fol. opposit. ternatis, estipul. (?), sepal. et petalis 6-10, stamin. dicyclis, ovario semi-innato, biloculari: — *Bauera*.

6. *Cunonieæ*. Frut. arb., fol. opposit. stipulat. < simpl. v. compositis, petalis 4-5-0, ovario lib. v. innato, 2-4-loculari: *Callicoma*, *Calicomis*, *Aphanopetalum*, *Weinmannia*, *Cunonia*, *Belangera*. . . . . .

7. *Hydrangeæ* s. *Hortensieæ:* Frutic. fol. estipulatis, oppositis, simpl., ovario innato<, raro baccante: — *Hydrangea, Platycrater, Schizophragma, Adamia....*

8. *Philadelpheæ.* Frutices foliis estipul. oppositis, simpl., calycis adnati lobis 4-10, nov. valvatis, petalis nov. imbric. v. induplicato-valvatis; stamina 2-∞-cycla; ovarium 3-4-10-locul., placentis porrectis<, stylis +— connatis; amalthæa 3-10-locularis, acromphalo loculi-septicido v. ruptilis; sem. ∞ tunicata, scobiformia: — *Philadelphus, Decumaria, Deutzia.*

FAM 150 TURNERACEÆ S. MODECCACEÆ *nob.*

Hbæ passim scandentes, cirrhosæ et urentes, v. frutic. et arbores, exoticæ<, foliis alternis v. oppositis, integris, palmatis v. pinnatifidis, passim stipulatis. *Flores* monoclini, rarius diclini, cymoso-solitar. v. conferti: calyx adnat. v. liber, 3-4-5-15-fidus, nov. imbric. v. contortus, raro valvat.. Torus epi-perigynus, sæpe multiplex, in parapetala et parastemones solutus; petala alterna, magna, minima v. O, nov. imbric. v. contorta<. Stamina mono-di-polycycla, lib. v. +— connata, antheris normal. <, basi-dorsifixis. *Ovarium* syn-schizostylum, plerumque uniloculare, placentis pariet. 3-5, ovulis anatropis (Samydeis amphitrop.), confertis v. solitar., pend. v. ascend. et horizontal.. *Amalthœa* v. *capsula* libera, passim baccata, indehisc., acroschiza v. 3-5-valvis. Semina conferta medivalvia v. marginalia v. solitaria, testa sæpe sulcata, scrobiculata, arillata et funiculata, albumine carnoso, raro O; embryo brachylobus v. phyllolobus, raro amygdalinus. — Spec. 480?, familiæ plures parvæ, habitu et floribus variis (= Portulacaceis), in unam confertæ.

*A.* Estipulatæ.

1. *Gronovieæ.* Hbæ erectæ v. scand., hispidæ, urentes<, fol. estipul. alternis, 5-lobis v. lacerato-dentatis, cymis terminalib. v. oppositifoliis, quibusd. capitatis-involucratis

*flores* parvi, epigyni, 5-meri, stenopetali, toro urceolato v. in parapetala 5 soluto; stam. 1-∞-cycla, antheris basif. oblongis, lib. v. coalitis et mucronatis; ovarium 1-2-3-locul., monostylum, ovulis solitar. pend.. *Nux* 1-3-locul., 1-3-sperma; embryo exalbumin., fere amygdalinus: — *Cevallia*, *Gronovia*; *Fissenia* R. Br.

2. *Loaseæ*. Hbæ, passim scandentes et pilis urentibus præditæ, foliis estipul. altern. v. oppositis, integris v. palmatis; *flores* solitar. v. conferti, epigyni, 4-5-meri, stam. 2-∞-cycla, sæpe parapetalis et parastemonib. aucta, antheris basi-dorsifixis. Ovarium 3-5-phyllum, synstylum, placentis 3-5, intervalvarib., ovulis confertis < pendulis. *Amalthœa*, raro baccata, 3-5-valvis v. acroschiza, poly-oligosperma, embryo albumini subæquilongus, brachylobus: — *Blumenbachia*, *Cajophora*, *Loasa*, *Grammatocarpus*, *Bartonia*, *Mentzelia*....

3. *Datiscæ*. Hbæ annuæ, foliis alternis, pinnati- v. trisectis, serratis — v. arbores foliis serotinis, sublobatis, dentatis, subtus tomentosis, estipulatis. *Flores* apetali? dioeci v. monoclini, glomerato- v. spicato- cymosi; ♂ sepala 3, 4, 5, stamina 4 antesepalina v. 12-15, antheris normalibus, elongatis; ♀ et ☿ calyx adnatus, 3-5-dentatus (antheræ 3 subsessiles extrorsæ? epigynæ). *Ovarium* unilocul., valvis 3-5 antesepalinis, placentis parietalib. 3-5, ovulis ∞, bi- multiseriatis, horizont. v. ascendentibus, anatropis; styli breves bifidi, stigmatib. papillosis, + — elongatis. *Amalthœa* sepalis et stylis coronata, vertice hians, polysperma; sem. oblonga, rugoso-striata, arillo cupulari, albumine carnoso, embryone axili, subæquilongo, brachylobo: — *Tricerastes*, *Datisca*, *Tetrameles*.

4. *Malesherbieæ*. Hbæ puberulæ v. suffrut., foliis estipul. pinnatifid. <, flor. solitar. v. confertis, 5-meris; calycis tubus + — elongatus, ad faucem toro annulari v. 10-lobo et petalis coronatus, stam. hypogyna subexserta; ovarium lib. brachypodum, stylis excentricis et placentis parietal. 3, ovulis

∞ pendulis. Capsula calyce induviata, acroschiza, polysperma, sem. striata: — *Malesherbia, Gynopleura.*

5. *Turnereæ.* Hbæ puberulæ, frutices, foliis estip. alternis, integris, serratis<, quibusd. basi biglandulosis v. pinnatifidis; flores axill. solitar. v. conferti, 5-meri, calyce deciduo, petalis perigynis, stamin. hypogynis, antheris dorsifixis. Ovar. lib. 3-phyllum, uniloculare, stylis 3, apice 2-∞-fidis, ovulis ∞, adscend. Capsula 3-valvis; sem. medivalvia ∞, scrobiculata, strophiolata: — *Turnera, Piriqueta, Wormskioldia.*

6. *Papayeæ.* Arbores (et hbæ?) lactescentes, passim venenatæ, acrophyllæ, caule simpl. oligoclado, rapide crescente, foliis integris v. palmatis, estipulatis. *Flores* di-monœci, axillar., cymoso-racemosi; ♂ calyx minimus, 5-dentatus, corolla hypocraterimorpha, lobis 5, nov. valvatis, antheræ 10, summo tubo insertæ, normales, apiculatæ, 5 antepetalinis subsessilibus, ovarii rudimentum; ♀ calyx idem, petala 5, basi passim appendiculata, *ovarium* liberum, sessile, oviforme, placentis parietalibus 5, cum septis, dum adsunt, alternantibus, ovulis ∞ subhorizontalibus, anatropis, stigmate 5-radiato, subsessili. *Bacca* unilocularis poly-teichosperma; semina ovata, testa crustacea, muricata, fusca, embryone axili, albumini carnoso subæquilongo, cotyledonibus foliaceis, radicula brevi: — *Carica, Vasconcella.*

*B.* Stipulatæ <.

7. *Passifloreæ.* Frutices, passim scandentes, rarius hbæ v. arbores, foliis stipulatis< alternis, integris, serratis v. palmatis, raro pinnatis, petiolo passim glanduloso; cirrhi pedunculares. *Flores* mono-dielini, parvi v. maximi, solitarii, involucro 3-5-mero ad articulum pedunculi prædit, v. conferti, passim cirrhomorphi: calyx limbo 5-4-5-fido, toro (hypanthemio) sæpius multiplici, petala adnata — alterna, coronas varias filares et androeceum monadelphum, gynopodium vaginans gerente, antheris 5-4-8, dorsifix. versatilibus. *Ovarium*

gynopodio brevi v. longo sublatum, unilocul., placentis 3 (5), parietal., ∞ - ovulatis. *Bacca* v. *capsula* trivalvis <, sem. medivalvia ∞ arillata et funiculata, embr. phyllolobo (Spec. 210):— *a*) Monoclinæ: *Thompsonia, Passiflora, Murucuja, Tacsonia....* *b*) Diclinæ: *Modecca, Kolbia, Acharia....*

8. *Paropsieæ.* Frutices arb., fol. stipulatis, alternis integris; flores axill., solitar. v. conferti: calyx persist. < 5-fid., fauce passim micropetalophora et coronata, stam. 5-20 hypogyn, a ovar. sess. v. stipitat., 3-5-phyllum — et capsula 3-5-valvis (= Passifloræ): — *Paropsia, Smeathmannia, Ryania.*

9. *Samydeæ.* Frut. arbores foliis stipulat. altern. coriaceis, passim serratis v. punctatis; flores axillar. conferti v. solitarii, parvi <: calyx persist. 4-5-fidus, toro perigyno + — alto, stamina 6-15 gerente, petalis alternis minim. v. 0, antheris basifixis. *Ovarium* 3-5-phyll. unilocul. synstylum, placent. parietal., ovulis ∞ amphitrop. adscend., *Capsula* coriac. v. carnosa; sem. medivalv. arillata, album. carnoso-oleoso, embryone brevi, phyllolobo: — *Samyda, Casearia, Eucereæa, Candelabria, Periclistia?..*

10. *Homalieæ.* Frut. v. arbusculæ, foliis stipulatis < altern. integris, passim denticulatis; *flores* parvi, racemosi, ebracteati, calycis adnati < limbo 5-15-lobo, petalis exiguis totidem, stamina polyadelpha, antepetalina <; *ovar.* semiinnat. (v. liber.), unilocul., 2-3-5-phyll., schizostylum, placent. pariet. 2-5, ovulis ∞ < pend. anatropis. Amalthæa v. capsula aeroschiza, raro baccata v. 1-sperma; sem. medivalv., albumine carnoso, embr. phyllolobo: — *Homalium, Blackwellia, Anctia, Trimeria, Asteropeia?..*

## *Ordo III. Combretastra.*

Gynoeceum 1-6-loculare, innatum v. liberum, sem. exalbuminosa <; flores quibusd. irregulares v. depauper., folia sæpius integra, raro stipulata v. composita.

FAM. 151. AMMANNIACEÆ. *nob.*

Hbæ, frut. arbores, foliis estipulatis, integris, oppositis, verticill., raro altern. v. punctatis. *Flores* plerumque monoclini et regulares, cymoso-solitarii, fascicul. v. racemosi: calyx persist. costatus<, limbo 3 - ∞ - fido, novello valvato, passim lobis exterioribus altern. minorib. aucto; torus perigynus, ad faucem petala, lobis calycis exteriorib. alterna, tenera, sæpe undulato—plicata, raro O, inferius stamina petalis alterna et numero æqualia, pauciora v. 2-3-pla gerens; antheræ normal. ellipsoid., basi-dorsifixæ. *Ovarium* liber. synstylum, 2-3-4-6-loculare, septis quandoque incompletis, placentis centralib.<, ovulis ∞ < anatropis, horiz. v. ascend.. *Capsula* bi-plurilocularis, poly-oligosperma, irregulariter, transversim v. valvatim dehiscens. Sem. ovato-angulata v. compressa et alata, exalbumin., testa coriac., cotyled. crassæ, auricul., rad. brevis. Spec. 300.

a. *Lythrarieæ nob.* — semina aptera: — *Suffrenia*, *Rotala*, *Middendorfia*, *Peplis*, *Ammannia*, *Nesæa*, *Pemphis*, *Lythrum*, *Cuphea*, *Crenea* (*Dodecas*), *Ginoria*, *Grislea*, *Lawsonia;* — *Henslowia* (dioeca, apetala).

b. *Lagerstroemieæ*: sem. alata: — *Diplusodon*, *Lafoensia*, *Lagerströmia*...

FAM. 152. EPILOBIACEÆ *nob.*

Hbæ frut. arbores, foliis estipulatis, oppositis v. altern., integris v. sinuatis. *Flores* plerumque monoclini, quibusd. irregulares, solitarii axillar. v. racemosi: calyx tubo adnato, passim supra ovar. producto, limbo 4-5-3-2-partito, nov. valvato, ad faucem petala alterna, nov. convoluta<, passim caduca, v. nulla — et stamina alterna v. 2-3-cycla et partim abortiva, gerens; antheræ normal. basi-dorsifixæ. *Ovarium* monostylum, 4-2-1-loculare, ovulis anatropis, +— copiosis, adscend. v. pendulis. *Amalthæa* 4-2-1-locular. loculi-v. septicida, quibusd. baccata, dura, drupacea. Semina conferta v. solitaria, exalbumin., quibusd. alata, fimbriata v. comosa: cotyled. +— crassæ, planæ, auriculatæ<, convolut. v. plicatæ. Spec. 650.

1. *Circæeæ*: calycis tubus non productus; flor. dimeri, amalthæa indehisc. bilocul. 2-sperma: — *Circæa.*

2. *Lopezieæ* calyx=, flor. irregul. 4-petali v. apetali, 1-2-andri; amalth. polysperma: — *Lopezia*, *Diplandra*, *Riesenbachia*, *Semeiandra.*

3. *Jussieveæ:* calyx=, stam. 1-2-cycla; amalth. septicida <, sem. nuda: — *Isnardia*, *Ludwigia*, *Jussieua*, *Plicurea.*

4. *Epilobieæ:* cal. tubus supra ovarium —+— productus; stam. 2-cycla; amalth. loculicida, ∞-sperma; semina nuda, fimbr. comosa v. alata: — *Sphærostigma*, *Meriolix*, *Oenothera*, *Godetia*, *Boisduvalia*, *Clarkia*, *Eucharidium*, *Epilobium*....; *Montinia*, *Hauya.*

5. *Fuchsieæ:* cal. tubus productus, stam. dicycla; amalthæa baccata polysperma: — *Fuchsia.*

6. *Gaureæ* — differunt a præcedent. amalthæa drupacea, 1-4-sperma: — *Gaura*, *Stenosiphon*...

7. *Combreteæ:* arbores, frutic. tropici, passim scandentes, foliis integris, flor. monoclin. v. polygamis, 4-5-meris; stamina dicycla, raro plura; ovar. uniloculare, ovulis 2-6 pendulis; amalthæa coriac., drupac. v. baccata, 4-5-ptera <, monosperma, raro disperma; cotyledones amygdalinæ v. rugoso-plicatæ: — *Sphalanthus*, *Quisqualis*, *Cacoucia*, *Combretum*...

8. *Terminalieæ:* Arb. frut. tropici, partim scand. v. ramis acrophyllis prædit, fol. integris, coriaceis <, petiolis apice passim biglandulosis; flores exigui, 5-meri, sæpe apetali et polygami: stam. dicycla <, ovar. unilocul. ovulis 2-5 pendulis; amalthæa drupacea—sicca v. baccata, 2-5-7-ptera v. angulata, monosperma, quibusdam achenium, calycis tubo longo rostratum; cotyledon. foliaceæ <, spiraliter convolutæ: — *Poivræa; Lumnitzera, Laguncularia*, *Anogeissus*, *Conocarpus*, *Pentaptera*, *Terminalia*, *Bucida*...

*Nota.* Revisis Oenothereis et Combretaceis auctorum, nullam differentiam essentialem invenio. Magis inter se differunt familiæ 4 sequentes, in unam confertæ, habitu consimiles. Terminalieæ quædam c. Rhizophoris littora marina incolunt.

FAM. 153. HIRTELLACEÆ *nob.*

Arbores, frutices tropici, ramis quarund. 4-gonis, foliis opposit. v. alternis, integerrim. coriaceis <, stipulis decid. v. O. *Flor.* mono-diclini, passim irregulares, cymosi-heterotaxi: calyx adnat. v. liber, sepalis 5-6-12, nov. valvat. v. imbricatis, petala alterna, quibusd. ad unicum reducta v. connata, nov. imbricata<. Stamina petalis alterna, rarius opposita, pauciora v. 2-3-cycla, antheris normal., basi-dorsifixis. *Ovarium* sæpius synstylum, 1-2-3-4-loculare, ovula anatropa, rarius amphitropa, 1-2—plura, pendula v. erecta. *Amalthæa* monosperma — v. *capsula*, *drupa* v. *bacca* 1-∞ -spermæ; embryo exalbumin.<, amygdalin. v. spirolobus.— Spec. 132?

a. *Rhizophoreæ:* folia opposita, flor. monoclini, regulares: calyx adnat. 4-12-merus, nov. valvatus, petala alterna, passim bifida v. laciniata, stam. 2-3-cycla; ovar. 1-4-locul. ovulis gemin. pendulis; *amalthæa* 1-sperma, apice radiculam embryonis inversi mox increscentem, longissimam exerens: — *Rhizophora*, *Ceriops*, *Kandelia*, *Bruguiera*, *Carallia.*

b. *Vochysieæ:* Americanæ, foliis opposit., verticillat. v. alternis; flores monoclini, irregulares, sæpe thyrsoidei: sepala 5, plus minus connata, raro et c. ovario, nov. imbricata, duobus exteriorib. minoribus, postico maximo, passim calcarato; petalum 1 anticum v. 3-5 alterna, perigyna <. Stam. unicum, connexivo crasso cordato, in alabastro stylum amplectente, quibusdam staminib. 2-3-4 abortivis v. perfectis, sepalinis v. petalinis auctum. *Ovar.* lib. 3-locnlare, ovulis amphitropis, solitar. 2-∞, axilib.— v. innatum et unilocul., ovulis 2 anatrop. erectis. *Capsula*+— dura, loculicida<, oligo-polysperma, v. *achenium* 1-spermum; semina oblonga, rhombea v. compressa et alata; cotyled. foliaceæ, corrugato-convolutæ; rad. brevi infera:—*Callisthene*, *Amphilochia*, *Qualea*, *Vochysia*, *Salvertia*, *Erisma*?...

c. *Chrysobalaneæ:* fol. alterna, flor. 1-2-clini, passim irregular. v. apetali, 5-meri, calyce passim basi gibbo v. subcalcarato, nov. imbricato, toro perigyno, stam. 1-3-cycla, sæpe inæqual. et partim abortiva, in alabastro complicata v. circinata. *Ovar.* subliberum, 1-2-loculare, stylo laterali v. basilari, ovulis gemin. erect. anatropis. *Drupa* 1-sp., raro disperma v. *bacca*, embr. amygdalinus: — *Stylobasium*, *Grangeria*, *Parinarium*, *Moquilea*, *Licuala*, *Hirtella*, *Chrysobalanus.*

d. *Chailletieæ:* folia alterna; flor. monoclini v. polygami, parvi 5-meri, fere hypogyni, passim irregulares, glomerati v. corymbosi, axillar. et sæpe petiolares: sepala ⊣— connata et petala quibusd. in corollam bilabiatam, antheriferam coalita; stam. 1-cycla, spuamulis 5 hypogynis alternis. *Ovar.* liberum, 2-3-locul., stylis 2-3, ⊣— connatis, ovulis geminis pend.. *Capsula* 2-locul. v. *drupa* 2-1-locularis; sem. solitaria, amygdalina, quibusd. arillata: — *Moacurra*, *Chailletia*, *Tapura*, *Stephanopodium.*

FAM. 154. SPONDIACEÆ *nob.* (TEREBINTHACEÆ).

Arbores, frutic., sæpe latice viscoso v. resinoso et ramis acrophyllis, foliis estipulat. < alternis, simpl., ternatis v. pinnatis. *Flores* mono-diclini, parvi, axillar. v. termin. thyrsoidei: sepala 3-5-plura, plus minus connata, torus annularis peri- v. hypogynus, petala alterna, nov. imbric. v. valvata et stamina normalia, 1-2-∞-cycla et partim effæta, gerens. *Ovaria* 1-6, libera v. inter se et c. toro connata, sæpe plura abortiva, ovula amphi — v. anatropa, 1-2, erecta v. pendula. — Nucula, drupa 1-5-pyrena, capsula v. syncyclium folliculare; sem. solitaria < exalbumin., embryo amygdalinus, quibusdam curvatus, rugoso-plicatus v. phyllolobus. — Spec. 200?

a. *Cassuvieæ:* calyx 3-5-plejomerus; raro adnatus, petala nov. imbric. v. O, stam. 1-2-cycla, quidusd. plura et passim sterilia; ovarium 1 v. plurib. sterilibus auctum, ovulo solitario, amphitropo v. hemianatropo, e funiculo lib. v. adnato ascend. v.

pend.; nucula v. drupa, embryone sarco-phyllo-lobo, ⊣— curvato: — *Pistacia*, *Sorindeia*, *Comocladia*, *Schinus*, *Duvaua*, *Rhus*, *Botryceras*, *Gluta*, *Holigarna*, *Mangifera*, *Anacardium*, *Semecarpus*, *Buchanania* ....

b. *Spondieæ*: arbores, fol. pinnat. flor. diclinis, 5-meris, 10-andris, petal. nov. subvalvatis; ovaria 5-2? connata, ovulis solitar. appensis, anatropis <; drupa di-pentapyrena; embr. amygdalin. vix curvatus: — *Spondias*, *Poupartia*.

c. *Burseraceæ*: folia quarund. stipulata; calyx lib. 3-5-mer. petala nov. valvata <, stam. dicycla, omn. fertilia; ovar. 1-2-5-locul. synstylum v. astylum, ovulis geminis, pendulis anatropis; drupa 1-5-pyrena, quibusdam epicarpio valvatim secedente v. capsula septicida; cotyledones amygdalinæ, sæpe rugoso-plicatæ: — *Balsamodendron* (*Heudelotia*), *Elaphrium*, *Icica*, *Bursera*, *Marignia*, *Canarium*, *Hedwigia*, *Boswellia*, *Garuga* .....

d. *Connareæ*: folia 1-∞-juga; flor. 5-meri, 10-andri, vix perigyni, sepalis et petal. nov. imbric., ovaria 5 discreta, substipitata, partim abortiva, ovulis gemin. erectis, anatropis; folliculi 1-5, mono-dispermi; sem. quibusd. arillata, albumine carnoso et embr. phyllolobo, aliis amygdalina, exalbuminosa: — *Connarus*, *Omphalobium*, *Cnestis*.

## *Ordo IV. Cassiatra (Calophyta).*

Gynoeceum 1-∞-phyllum, liber. v. innatum, semina exalbuminosa <. Pluribus flor. irregulares et folia articulato-composita, stipulata.

### FAM. 155. MELASTOMACEÆ.

Hbæ, frut. arbores, tropicæ <, caule ramisque passim 4-gonis, nodosis, foliis estipul., oppositis (v. verticillatis). integris, 3-9-nerviis et costulatis, rarius venosis v. crenulatis. *Flores* monoclini, regulares cymosi, thyrsoid. v. solitarii: calyx lib. v. ⊣— adnatus, limbo 5-4-6-3-mero, nov. valvato, quan-

doque lobulis alternis aucto; torus epi-perigynus; ad faucem calycis petala alterna (5-10 v. O), nov. contorta, et stamina dicycla< (5-20), antepetalinis passim minorib. v. abortivis: filamenta in alabastro deflexa, connexivo articulato, antheris elongatis< apice 1-2-porosis, rarius birimosis, novellis pendulis et intra sinus calycis receptis. *Ovarium* bi-pluriloculare, liber. v. nervis tubi calycini adhaerens, placentis centralib. -+— porrectis, ovulis ∞ anatropis. *Amalthæa* baccata<, 1-2-8-10-locularis v. *capsula* loculicida. Sem. -+— conferta, cochleata, oblonga v. angulata, testa crustacea, albumen O, embryo rectus v. curvatus. Spec. 1200.

a. *Lavoisiereæ:* antheræ apice 1-2-porosæ, ovar. liber. glabrum; capsula dehiscens<, sem. recta, embr. isolobo, hilo laterali: — *Meriania*, *Lavoisiera*, *Davya*, *Centradenia*, *Rhynchanthera*, *Cambessedesia*, *Salpinga?*.....

b. *Melastomeæ:* antheræ uniporosæ<, ovar. lib. v. innatum, apice passim setos. v. squamulatum, fruct. siccus, raro baccatus; sem. cochleata v. reniformia, embr. anisolobo, hilo basilari: — *Dicrananthera*, *Spennera*, *Microlicia*, *Rhexia*, *Marcetia*, *Trembleya*...; *Lasiandra*, *Chætogastra*, *Arthrostemma*, *Melastoma*, *Osbeckia*.....

c. *Miconieæ:* anth. 1-2-porosæ, ovar. innatum, amalthæa baccata, sem. recta: — *Leandra*, *Clidemia*, *Medinilla*, *Ossæa*, *Sagræa*, *Conostegia*, *Diplochiton*, *Miconia*, *Cremanium*, *Blakea*..

d. *Charianthereæ:* antheræ longitrorsum birimosæ, flor. passim 4-meri; ovar. innat. baccans, sem. recta: — *Charianthus*, *Chænopleura*, *Kibessia*, *Astronia*..

FAM. 156. MYRTACEÆ.

Arbores frut., raro hbæ, tropicæ<, foliis estipul.<opposit., rarius alternis v. verticillatis, teretib. v. planis, coriac<, parenchymate sæpe glandulis oleiferis prædito (punctato). *Flores* monoclini, regulares<, cymosi, thyrsoid., aggregati v. solitarii: *calyx* superus, 4-5-∞-merus, nov. valvatus v. calyp-

tralis; *torus* epigynus, *petala* alterna, raro O, et *stam.* 1-2-3-∞-cycla gerens; filam. brev. v. longa, libera v. monpolyadelpha, antheræ normales. *Ovarium* mono-synstylum, 1-2-3-∞-loculare, ovulis anatrop. confertis, pendulis<, raro amphitrop. v. solitariis. *Amalthæa* 1-∞-sperma, uni-multilocularis, superne loculi-scpticida v. operculatim (acromphalo secedente) dehiscens v. baccata, indehiscens; albumen O (?), embryo rectus, arcuatus v. spiralis, quibusd. in massam homogeneam conferruminatus. Spec. 1420.

A. Normales s. Legitimæ.

1. *Chamælaucieæ*: Frutic. Nov. Holland., sæpe ericoidei, micranthi, foliis opposit. endadenis (punctatis); ovar. uniloculare, uni-pluriovulatum, amalthæa 1-sperma:— *Calycothrix*, *Pileanthus*, *Verticordia*, *Chamælaucium*, *Genetyllis*, *Triphelia*...

2. *Leptospermeæ*: frut. v. arb. N. Holl. et Asiæ, fol. opposit. et punctatis <, raro serrulatis; stamina indefin.< lib. v. 1-4-5-adelpha, ovar. 2-plurilocul., ovulis confert. v. solitariis; amalth, sicca indehisc. v. capsulam loculi-scpticidam fovens:— *Tristania*, *Calothamnus*, *Conothamnus*, *Melaleuca*; — *Eucalyptus*, *Angophora*, *Callistemon*, *Metrosideros*, *Hypocalymna*, *Leptospermum*, *Fabricia*, *Baeckea*.....

3. *Myrteæ*: arb. frut. Americæ et alibi, fol. opposit. punctatis integerrimis; stam. indefin. libera; ovar. 2-∞-locul, ovulis confertis; amalth. baccata, 1-plurilocularis, sæpe 1-sperma:— *Sonneratia*, *Nelitris*, *Psidium*, *Myrtus*, *Myrcia*, *Culyptranthes*, *Syzygium*, *Caryophyllus*, *Acmena*, *Eugenia*, *Jambosa*...

4. *Olinieæ*: arb. frut. antarctici, fol. opposit. epunctat., stam. mono-plejocyclis, ovario 2-5 locul., ovulis gemin. v. pluribus; amalth. baccata v. drupacea, 1-oligosperma; sem. ovale v. cochleat., embryo spiralis v. arcuatus, synlobus teres: — *Fenzlia*, *Myrrhinium*, *Olinia*.

B. Anomalæ: ad Melastom., Combretac. v. Pomaceas vergentes.

5. *Memecyleæ:* arb. frut. foliis opposit. passim punctat., flor. 4-5-meris, stam. 2-cyclis, anther. acroschiz. incurvis; ovar. 1-loc., ovul. plurib. erectis?, amalthæa baccata, 1-2-4-sperma; cotyled. foliaceæ, globoso-convolutæ, altera alteram involvens: — *Memecylon*, *Mouriria*, *Guildingia.*

6. *Granateæ:* arbusculæ ramis spinesc., fol. opposit· verticill. v. alternis et axillarib., epunct., glabris; calyx colorat. 5-7-fidus; petala alterna, nov. imbric., stam. ∞ -cycla, ovar. ∞ -loculare; amalthæa corticata baccata, diaphragmate in loculos inferos 3 et superos 5-9 divisa; sem. ∞ parietalia, embryo rectus, cotyled. foliac. circumvolutis (= *T*erminaliæ): — *Punica.*

7. *Barringtonieæ.* Arbores robustæ (hbæ) Asiæ et Amer. trop., ramis sæpe acrophyllis, fol. epunctat. altern. rarius oppos. v. verticillatis, passim serratis et magnis, stipulis caduc. v. O; calyx 2-3-4-6-8-lobus, petala 4-8 (O); stam. ∞, monadelpha et petalis adnata <; ovar. 2-4-6-loc. ovulis gemin. senis v. pluribus; amalth. corticata, pulposa <, 1-6-locul., 1-∞ -sperma; embr. amorphus v. amygdalinus: — *Foetidia? Gustavia*, *Careya*, *Barringtonia.*

8. *Lecythideæ.* Arbores Americæ trop., fol. epunct. alternis, passim serratis et magnis; cal. limbus 6-2-fid., nov. valv. v. imbric.; petala 6-5 magna <; androeceum annulare, petalis adnatum, polyantherum, hinc in ligulam petaloideam, pronam, sterilem v. antheriferam productum; ovar. 2-6-locul., ovulis ∞ v. quaternis; amalthæa coriac. v. lignosa, magna (pulposa), 1-6-locul., kionophora, operculatim dehiscens, sem. ∞ v. solitar. ovata, v. compressa et alata, testa crassa; embr. amorphus v. dicotyledon. macrorhizus, curvatus et rugosus: — *Bertholletia*, *Lecythis*, *Couratari*, *Courupita*..

FAM. 157. ROSACEÆ.

Hbæ, frut. arbores, foliis stipulatis, alternis <, pinnat.,

digitat. v. simplicibus. *Flores* mono-diclini, regular. < epiperigyni, solitar. v. conferti: calyx tubo +— longo, limbo 5-4-3-9-mero, simpl v. stipulis alternis duplicato, nov. valv. v. imbricato; petala alterna, quibusd. O; stamina monopolycycla v. ad unicum reducta, antheris normalibus. *Ovaria* 1-∞, innata v. libera, gynophoro +— conspicuo, ovulis anatropis 1-∞, pend. v. ascend.; styli liberi<, termin. v. lateral. et basilar., persist. v. decidui. *Fructus* varii: 1-∞-spermi, sicci, bacc. v. drupacei, solitar. multiplices, in syncyclium, syncarpium v. amalthæam congesti, calyce decid., libero, +— alterato v. adnato; albumen O<, embr. amygdalin., raro phyllolobus. Spec. 940.

A. ROSARIÆ. Hbæ, frutic. (arb.), fol. sæpius pinnati-palmatisectis, stipulis petiolo adnatis; calyx 5-4-3-9-fidus, passim stipulatus; torus calyci adnatus, passim apetalus; stam. 1-∞, gynoeceum liber. simpl. v. multiplex, ovulis solitar <, gynophoro +— crasso. Nuculæ 1-∞, raro baccatæ, passim gynophoro sicco v. baccato impositæ, exsertæ v. calyci inclusæ aut innatæ:

a. *Sanguisorbeæ:* hbæ, frut. (arb); flor. parvi, sæpe apetali, calyce valv., 3-5-fido, demum indurato, clauso v. accreto; stam. 1-2-3-5-30; ovaria 1-2(3-4), ovulo solitar. et pend.<, radicula supera:— (*Aphanes*) *Alchemilla*, *Aremonia*, *Agrimonia*, *Leucosidea*, *Adenostoma*, *Acœna*, *Sanguisorba*, *Poterium*, *Tetraglochin*, *Margyricarpus*, *Cliffortia*....

b. *Dryadeæ nob.:* hbæ, frut., calyce valvato, stam.∞, gynophoro columnari v. obsoleto; ovaria 2-5-∞, acrostyla< ovulo adscend.; nuculæ muticæ, v. aristatæ aut caudatæ:— *Dryas*, *Coluria*, *Camaropsis*, *Waldsteinia*, *Sieversia*, *Geum*, *Fallugia*, *Cowania*.

c. *Potentilleæ:* Hbæ, frut., calyce nov. valv. v. imbricato, stam. 4-5-20, gynoph. crasso v. obsoleto, ovar. 4-∞, pleurostylis<, ovulum pendulum, nuculæ muticæ, quibusd. baccatæ:—

*Sibbaldia, Dryadanthe, Chamærrhodos, Horkelia; Potentilla (Tormentilla), Comarum, Fragaria; Dalibarda, Rubus.*

d. *Rosæ:* frutic. aculeati. < fol. pinnatis<, calycis fauce constricta, limbo 4-5-mero, nov. imbricato; stam. ∞, ovaria lib. ∞, ovulo pend., nuculæ ∞, toro et tubo calycis carnoso v. indurato inclusæ:—*Hulthemia, Rosa.*

B. CRATÆGARIÆ S. POMACEÆ. Arb. frut. (spinosi), fol. simpl. v. pinnatis, palmatis, calyx 5-merus, nov. imbric., stam. ∞<; ovaria 5-1, + —inter se connata, ovulis 2-1-pluribus, adscend., stylis lib. v. basi coalitis. Amalthæa toro succulento, carpellis 1-∞-spermis, cartilagin. v. osseis (pomum folliculare v. drupaceum); embr. amygdalin., raro spirolobus: — *Mespilus, Cotoneaster, Raphiolepis, Photinia, Eriobotrya, Amelanchier (Aronia), Sorbus, Cratægus (Spach), Pyrus, Cydonia.....*

C. SPIRÆARIÆ. Arb. frut. herbæ, fol. integr. v. pinnatis, palmatis; calyx decid. v. reflexus, nov. imbric. v. valv.; ovaria 5-10-2-1, libera, ovul. 2-plurib. pend. v. ascend.; syncyclium e folliculis 1-∞-spermis, raro folliculus solitarius: — *Cercocarpus, Purshia; Kerria, Spiræa, Gillenia, Nuttalia, Brayera?*; — *Kageneckia, Quillaya, Vauquelinia, Lindleya.*.

D. PRUNARIÆ S. AMYGDALACEÆ. Frut. arb., quædam spinesc., fol. integris, petiolo sæpe glanduloso, stipul. caducis; fl. 1-2-clini, præcoc. v. coætanei: calyx decid., stam. polycycla<, ovarium 1 (2-5) liberum, ovulis 2, e funiculo erecto pendulis; drupa 1-sperma<:— *Pygeum, Amygdalus, Persica, Armeniaca, Prunus, Cerasus.*

FAM. 158. LEGUMINOSÆ S. FABACEÆ.

Herbæ, frut. arbores, foliis stipulatis et quibusd. stipellatis, alternis, compositis, anamorphosi nullis v. in folia simpl., phyllodia, spinas v. cirrhos abeuntibus. *Flores* monoclini, irregulares, rarius diclini v. regulares, racem., spicati, capi-

tati v. solitarii, perigvni v. fere hypogyni: calyx 5-merus, ±— regularis; petala 5, sæpe difformia, in corollam papilionaceam figurata, quibusdam abortiva v. æqualia. Stam. 10 (3-5-∞), mon-di-triadelpha v. libera, antheris normal., quibusd. poroschizis v. partim abortivis. *Gynoeceum* monophyllum<, axigenum, uniloculare, marginib. carpophylli vexillo corollæ oppositis, quandoque introflexis — biloculare v. isthmis transversis interceptum — ∞-loculare (folium pinnatum æmulans), ovulis ana-amphitropis, plurimis v. solitariis. *Legumen* polymorphum: minim. v. orgyale, 1-∞-spermum, sutura utraque v. ventrali dehiscens, rarius indehiscens, drupaceum, lignosum v. in articulos monospermos transversim sectile (lomentaceum). Semina ad suturam ventralem (vexillarem) alternatim biseriata v. solitaria, exalbuminosa<, quibusd. longe funiculata et arillata; embryo curvatus v. rectus, cotyledonib. magnis, ±— crassis. Spec. 6500.

A. CYTISARIÆ nob. s. Curvembryæ phyllolobeæ. Hbæ— arbores; corolla papilionac., stam. 10 (8-9), 1-2-adelpha v. libera; embr. curvatus, cotyled. subfoliaceæ<.

1. Cytisinæ (s. Loteæ): stam. 10, 1-2-adelpha, legum. normale v. biloculare; folia pinnata, digitata v. simpl..

a. *Trifolieæ:* stam. diadelpha, fol. 3-5-dactylia<, primordial. alterna: — *Medicago*, *Trigonella*, *Pocochia*, *Melilotus*, *Trifolium*, *Dorycnium*, *Lotus*, *Tetragonolobus*, *Donjeania*, *Hosackia*.....

b. *Genisteæ:* stam. 10, monadelpha<, folia simpl. v. digit., raro pinnata:— *Anthyllis*, *Cytisus*, *Argyrolobium*, *Trichasma*, *Genista*, *Sarothamnus*, *Spartium*, *Ulex*, *Ononis*, *Adenocarpus*, *Leobordea*, *Aspalathus*, *Loddigesia*, *Lupinus*, *Crotalaria*, *Liparia*, *Borbonia*, *Rafnia*, *Templetonia*, *Goodia*, *Bossiæa*, *Platylobium*, *Hovea*.....

c. *Galegeæ:* stam. diadelpha <, fol. 1-∞-juga, primordial. opposita: — *Dalea*, *Amorpha*, *Psoralea*, *Güldenstädtia*,

*Indigofera*, *Glycirrhiza*, *Galega*, *Tephrosia*, *Robinia*, *Sesbania*, *Caragana*, *Halimodendron*, *Calophaca*, *Colutea*, *Swainsonia*, *Lessertia*, *Sutherlandia*, *Clianthus*, *Carmichœlia*, *Sphœrophysa*, *Eremosparton*.....

d. *Astragaleœ:* fol. pinnat., legumine subbiloculari: — *Phaca*, *Orytropis*, *Astragalus*, *Biserrula*....

2. Hedysarinæ. Differunt legumine lomentaceo et foliis passim stipellatis.

a. *Coronilleœ* — umbellatæ: — *Scorpiurus*, *Coronilla*, *Arthrolobium*, *Ornithopus*, *Hippocrepis*, *Bonaveria*.

b. *Hedysareœ nob.* — racemosæ: — *Amicia*, *Stylosanthes*, *Arachis*, *Adesmia*, *Aeschynomene*, *Smithia*, *Lourea*, *Uraria*, *Nicolsonia*, *Desmodium*, *Taverniera*, *Hedysarum*, *Onobrychis*, *Lespedeza*, *Ebenus*; — *Alhagi*, *Alysicarpus*, *Nissolia*.....

3. Podalyrinæ: hbæ — frut. (arb.), fol. simpl. v. 1-∞-jugis, stam. 10 libera. (Australasiæ, Capenses et Cistropicæ).

a. *Mirbelieœ:* frut. Nov. Holl. fol. simpl., legum. subbiloculari: — *Mirbelia*, *Dichosema*....

b. *Dilwynieœ s. Pulteneœ:* frut. N. Holl. fol. simpl. <, ovario biovulato: — *Pultenœa*, *Gastrolobium*, *Eutaxia*, *Dillwynia*, *Aotus*, *Sphœrolobium*, *Viminaria*, *Daviesia*, *Jacksonia*.

c. *Podalyrieœ nob.:* hbæ-frut. N. Holl. Capenses, Indicæ et Cistropicæ; fol. 1-3-dactyl., ovario ∞-ovulato: — *Gompholobium*, *Chorozema*, *Podolobium*, *Oxylobium*, *Callistachys*, *Brachysema*..; *Dalhousiea*; *Podalyria*, *Cyclopia*; *Baptisia*, *Thermopsis*, *Anagyris*...

4. Sophorinæ. Arb. frut. hbæ, fol. pinnat. v. simpl., stam. 10-8-9, libera <; embryo quarund. rectus v. sarcolobus: — *Myrospermum*, *Edwardsia*, *Sophora*, *Ammodendron*, *Calpurnia*, *Virgilia*, *Styphnolobium*, *Castanospermum*, *Ormosia*, *Alexandra*, *Bowdichia*, *Cercis*....

II. GLYCINARIÆ *nob.* s. Curvembr. sarcolobeæ. Hbæ-arb., flor. papilion. et decandris <, embr. curvato et sarcolobo <.

1. Viciinæ: hbæ, fol. apice cirrhomorphis <, stam. 10, diadelpha, legum. normale, cotyled. hypogeæ: — *Ervum, Vicia, Lathyrus, Orobus, Pisum, Cicer.*

2. Phaseolinæ: hbæ, frutic., fol. 1-∞-jugis, stipellatis <, stam. 10 monadelpha; legum. norm. v. sublomentaceum, cotyled. hypo-epigeæ: *Abrus; — Flemingia, Rhynchosia; — Cajanus; — Lablab, Dolichos, Vigna, Phaseolus; — Apios, Wisteria; — Butea, Erythrina, Mucuna; — Canavalia, Dioclea; — Glycine, Soja; — Hardenbergia, Zichya, Kennedya; — Centrosema, Clitoria, Amphicarpæa....*

3. Dalberginæ. Arb. frut., fol. alterne-pinnatis v. simpl. <, stam. 10, 1-2-adelpha; legumen indehisc. < passim phragmifer. v. drupaceum; embr. quarund. rectus:— *Amerimnon, Hecastophyllum, Pterocarpus, Drepanocarpus, Pongamia, Dalbergia, Piscidia, Geoffroya, Andira, Dipterix.....*

4. Swartziinæ: arb. frut. fol. pinn. v. simpl. calyx valvat. 4-5-lobus v. unirimosus; petala 5-3-1, inæqu. v. 0; stam. 9-10-plura, libera, heterogena <, ovar. bi-pluriovulat.; legumen mono-oligosperm., quibusd. sem. arillata et embr. rectus: — *Baphia, Zollernia, Swartzia, Aldina.*

III. CASSIARIÆ (Rectembryæ loxanthæ). Arb. frut. passim spinosi et diclini (hbæ), fol. pinnatis v. 2-3-pinnatis, 2-3-dactyl. et simpl., cal. 5-5-mer., corolla irregularis (raro papilion.) 5-1-petala v. nulla: stam. perigyna, 10-5-3 (8-25), lib. v. coalita; legum. ∞-1-sperm. quibusd. phragmifer. drupaceum, pulposum v. baccat.; embryo rectus, cotyled. +— —crassæ (oleosæ): — *Brownea; Copaifera, Jonesia, Tamarindus, Amherstia, Schotia, Gymnocladus, Guilandina; Parkinsonia, Hoffmanseggia, Cæsalpinia, Poinciana, Hæmatoxylon; Hymenæa, Bauhinia; Aloëxylon, Cassia; Gleditschia, Vouapa, Ceratonia, Dialium; — Detarium.....*

IV. MIMOSARIÆ (Rectembryæ orthanthæ). Arb. frut. (hbæ), passim aculeatæ, foliis pinnatis, sæpius decompositis, quibusd., irritabilib. v. ad phyllodia simpl. reductis. *Flor.* 1-2-clini, regulares, sæpius parvi et dense conferti: sepala et petala 4-5, plus minus connata, nov. valvata, raro imbric.; stamina 1-2-∞-cycla, passim exserta, monadelpha et antheris acradenis. *Ovarium* (raro plura) ovulis anatropis. Legumen norm. v. lomentaceum, indehisc. v. quasi 4-valve; sem. nuda v. arillata, embryo rectus, nonnullis albuminosus:— *Erythrophleum*, *Parkia;* — *Lagonychium*, *Prosopis*, *Inga*, *Acacia*, *Desmanthus*, *Schrankia..;* *Gagnebina*, *Adenanthera..;* *Entada*, *Mimosa....*

## Classis XII. Thalamanthæ.

Flores hypogyni, dialypetali, quibusd. incompleti v. nudi: organa floris omnia libera et decidua, gynoeceo persistente, ni anthemium in torum hypogynum, stamina monadelpha v. corollam synpetalam aut sepala coalescant — v. flos ad gynoec. v. androeceum nuda reducatur. In quolibet ordine semina albumin. v. exalbuminosa et folia simpl. v. decomposita.

### *Ordo I. Violastra.*

Gynoeceum endokionide et gynophoro destitutum, sess. v. stipitat. (gynopodiatum); spermophori parietalis crura (placentæ) 1-3-20 intervalvaria, medivalvia v. excentrica et carpophyllis conduplicatis amplexa; hinc semina plerumque parietalia. Quibusdam flor. irregulares et folia stipulata. Familiæ 14, ad quarum reductionem novum examen generum intermediorum desideratur. Modeccaceas repetunt.

#### FAM. 159. DROSERACEÆ.

Hbæ — suffrut., foliis estipul. ? imis v. alternis, integris vel fissis, glanduloso-ciliatis, novellis subcircinatis. *Flores*

monoclini, regular., termin. v. axill., solitar. v. racemosi: sepala basi connata et petala marcesc. 5, nov. imbricata; stam. 5 alterna v. 10-20, libera, antheris extrorsis? passim poroschizis. *Ovarium* liberæ. schizostyl., unilocul., placentis 3-4-5-10 parietal., ovulis anatrop. ∞, horiz. v. ascend.; quibusd. ovarium 2-3-locul., placentæ central. breves et ovula pend., pauca. *Capsula* eseptata 3-5-valvis, semivalvata v. 2-3-locul. et loculicida, poly-oligosperma. Sem. medivalvia v. centralia, microembrya, testa crust., raro tunicata, album. carnosum. Spec. 80? — *Drosera*, *Aldrovanda*, *Byblis*, *Drosophyllum*, *Dionæa*, *Roridula*.

FAM. 160. VIOLACEÆ.

Hbæ — frutic., fol. stipulat. alternis <, integris v. lobatis. *Flor.* ☿, irregulares, rarius regulares, lateral. cymoso-solitarii v. conferti, 5-meri: sepala —+— connata, persist. <, sæpe inæqual. et basi appendiculata, nov. imbric.; petala alterna, marcesc. <, —+—difformia et spathulata, maximo passim calcarato; androeceum coroniforme, conic., brachynemum, passim glandulifer. v. calcaratum, antheris 5, norm. v. perischizis. *Ovar.* 3-phyllum, uniloc. synstylio sursum tumido, placentis 3 pariet., ovulis anatrop., ∞ v. paucis. *Capsula* 3-valvis; sem. medivalvia, ∞, subglob. v. compressa, raro solitar. v. carunculata; embryo axil., albumini carnoso subæquilongus v. brevis. Spec. 300.— *Viola*, *Jonidium*, *Noisettia*, *Anchietea*, *Corynostylis*..;— *Alsodeia*, *Hymenanthera*..

FAM. 161. FRANKENIACEÆ.

Hbæ-fruticuli, fol. stipulatis v. estip., alt. v. oppos., integris (serrat.). *Flor.* ☿, regul., cymoso-solitar. v. conferti, rubent., albi (flavi); sepala 5-4, —+— connata, nov. imbric.; petala alterna, nov. subcontorta, partim spathulata et coronifera; stamina 5-6-plura, passim ananthera. *Ovar.* 3-4-phyll., uniloc. v. basi 3-loculare, ovulis anatr. ∞ <. *Capsula* 3-4-

valvis, poly-oligosperma; sem. medivalvia v. marginalia, ovata v. compr., testa crust., album. carn. v. farinac., embr. subæquilongo. Spec. 42.— *Sauvagesia*, *Lavradia*; *Anisadenia*; *Frankenia*.

FAM. 162. CISTACEÆ.

Hbæ-frutic., passim resinosi, pubesc. et stipulati, fol. opposit. (v. altern.), integris. *Flor.* ☿, regul., solitar. v. racemosi, flavi, albi, rosei, perigonio utroque ratione contraria tortili: sepala 3, sæpe duobus exteriorib. minorib. v. æqual. aucta; petala 5-3, caduca; stam polycycla < (3-100), libera, exteriora quibusd. sterilia; antheræ normales. *Ovar.* lib., 3-∞-phyllum, synstyl., unilocul. v. marginib. carpophyllorum ⊣— introflexis incomplete 3-10-loculare; ovula atropa v. hemianatropa adsc., raro pend., ∞ v. pauca. *Capsula* uni-v. subtri-decemlocul., 3-10-valvis; sem. medivalvia, funiculata, ∞ v. pauca, subglob., albumine farin. v. subcorneo, embr. excentrico, subrecto, flexuoso v. spirali (= Cruciferis). Spec. 185. — *Fumana*, *Cistus*, *Helianthemum*...; *Lechea*, *Hudsonia*..

FAM. 163. BIXACEÆ.

Arb. frut. exotici, fol. stipulat. < altern., integris (dentat.), passim endadenis. *Flor.* mono-diclini, solitar. v. confertì: sep. 3-5-7-12, lib. v. basi connata, nov. imbric. <; petala alterna, nov. imbric. v. 0; stam 1-∞-cycla, externa quibusd. sterilia; antheræ norm. v. acroporæ. *Ovar.* lib., 2-3-plejophyllum, unilocul., syn-v. schizostylum, placent. pariet. 2-plurib., simpl. v. ramosis, ovulis anatr. ∞. *Capsula* bi-plurivalvis v. indehisc., baccata; sem. plura, testa crust. passim tunicata, ⊣—albuminosa, embr. phyllobo. Spec. 90?— *Bixa*, *Lindackeria*..; *Carpotroche* (*Mayna*), *Phoberos*, *Ludia*, *Laetia*, *Prockia*, *Banara*, *Azara*...; — *Flaccourtia*, *Xylosma*, *Melicytus*; *Kigellaria*, *Erythrospermum*, *Hydnocarpus*...

FAM. 164. ERYTHROXYLACEÆ.

Fruticuli-arbores, tropicæ fol. altern. (v. oppos.), integris,

glabris <, passim triplinerviis, axillis squamigeris (stipulæ?). *Flor.* ☿, regul., solitar. v. conferti, albi v. flavesc.: sepala 5 ⊣— connata, persist.; petala alterna, coronifera, nov. imbric.; stam. 10, monadelpha, antheris norm. versatil. subglobosis. *Ovar.* lib. 2-3-locul., styli 3, ⊣— connati, capitati; ovula anatr. pend., solitaria v. abortiva. *Drupa* 1-sperma; testa coriacea, album. cartilag. parcum, embryo phyllolobus, brachyrrhizus. Spec. 75. — *Erythroxylum* (*et Sethia*).

FAM. 165. TREMANDRACEÆ.

Fruticuli Nov. Holland., sæpe pilis glandulosis et pube stellata obsiti, fol. estipul., altern. v. verticillat., integris (parvis). *Flor.* ☿, regul., axill. solitarii: sep. 4-5, lib. v. basi connata, nov. valvata; petala alterna, nov. involuta; stam. 8-10, geminatim petalis opposita, brachynema, antheris extrorsis, 2-4-locularib., tubulo apicali communi hiantibus. *Ovar.* synstyl., bilocul., ovulis anatr. pend., solitar. v. geminis. *Capsula* compressa, bilocul., loculicida; 2-sperma, chalaza rostellata, embryo teres, albumine carnoso brevior. Spec. 16. — *Tetratheca*, *Tremandra*.

FAM. 166. POLYGALACEÆ.

Hbæ, frut. arb., quæd. volubiles, foliis estipul. sparsis v. opposit. et verticillat., integris <? *Flor.* ☿ irregular. <, axillar. v. term., cymoso-racemosi v. solitar., pedicellis articul. et 3-bracteatis: sepala 5 (4-3), plus minus connata et inæqualia, 2 interiorib. majorib. petaloideis <, postico et 2 anticis minoribus; petala 5-3, sæpius inter se et c. androeceo connata in corollam cariniformem lobatam; stam. 8-(4-6), mon-diadelpha, raro libera, antheris basifix., unilocul. acroporis (scyphoideis), rarius bilocul. v. rimosis; torus hypogyn. v. 0. *Ovar.* lib., compress. < bilocul., synstyl., stigm. crasso <, loculo supero (sepalo postico opposito) quandoque minori v. nullo; ovula anatropa, appensa, solitar. (2-plura). *Capsula* bilocul., disperma, loculicida, rarius *drupa* 1-sperma,

*nucula* v. *samara*; sem. passim arillata; albumen carnos. v. gelatin., parcum v. O, embryo æquilongus. Spec. 495. — *Salomonia*, *Polygala*, *Badiera*, *Comesperma*, *Muraltia*, *Mundia*, *Monnina*, *Securidaca*. . — *Krameria*, *Xanthophyllum*, *Soulamea*; — *Trigonia*? (huic capsula 3-locul. septicida).

FAM. 167. PITTOSPORACEÆ.

Arbor. frutic. exotic., quædam scandentes, fol. estipul. altern. integris, rarius pinnatisectis. *Flor.* ☿ regular. <, lateral. v. termin., cymoso-solitar. v. racemosi: sep. et petala 5, lib. v. basi connata, decid., nov. imbric.; stam. 5 alterna, quibusd. subsecunda, antheris normal. v. acroporis. *Ovar.* lib., 2-5-phyllum, synstyl., septis ⊣— completis, ovulis anatrop. confertis, horiz. v. ascend.. *Capsula* loculicida, passim dura v. baccata, poly-oligosperma; sem. subglob. v. angulata, nuda v. strophiolata, testa lævi viscida <, album. duro; embr. minutus, cotyledon. vix distinctis. Spec. 78. — *Billardiera*, *Sollya*, *Pronaya*, *Cheiranthera*, *Marianthus*, *Bursaria*, *Pittosporum*. . . .

FAM. 168. NANDINACEÆ s. BERBERIDEÆ.

Hbæ caudicatæ, frut. arb., fol. estipul.? palmat. digitat. v. pinnatis et decompositis, primariis sæpe abortivis, in spinas simpl. palmat. v. pinnatas conversis, axillaribus tunc fasciculatis, simpl. <. *Flores* ☿, regul., lateral. v. petiolares, cymoso-solitar. v. racem., thyrsoidei, lutei v. albi, bracteis, sepalis et petalis deciduis, subconformib., raro nullis, passim in perigonium tri-tetra-plejocyclum digestis, hinc omnib. organis quasi oppositis: sepala 4-6-plura, in cyclos alternantes 2-3-plures digesta; petala 6-4-8-3-9, passim basi biglandulosa v. appendiculata; stamina petalis opposita et æquinumera, raro plura, filam. brevia, complanata < passim articulata et irritabilia, thecis polliniferis geminis, valvula adsurgente, decidua <, rarius rima longitrorsum dehiscentibus. *Ovar.* monophyllum, stylo brevi v. O, stigm. subpeltato <, ovulis anatrop. 2-1-∞ , 2-3-seriatis; e placenta laterali brevissima v.

elongata ascendentibus. *Folliculus*, sæpe baccatus, 1-2-∞ -spermus, quibusd. vage, transversim v. longitrorsum et latericide dehiscens. Sem. subovata, testa +— crassa, (strophiolata <), album. carnoso v. subcorneo; embryo axil. minimus v. subæquilong., radicula majori: — *Achlys*, *Podophyllum*, *Jeffersonia*; — *Diphylleia*, *Bongardia*, *Leontice*; *Epimedium*, *Vancouveria*, *Aceranthus*; *Berberis*, *Mahonia*, *Nandina*.

FAM. 169. PAPAVERACEÆ.

Hbæ annuæ v. frutescentes, quædam lactescentes, acaules v. caudicatæ, foliis altern., raro oppositis, integris, dentatis, simpliciter v. decomposito-sectis. *Flor.* ☿, regul. v. irregul., cymoso-solitar., umbell. racem. v. thyrsoidei: sepala 2 (3-4) caduca, raro coalita; petala 4, rarius 6-8-12, di-tri-cycla, v. O, nov. imbric. et passim corrugata, æqualia patentia v. difformia conniventia et subconnata; stam. mono-polycycla, libera v. diadelpha (6), antheris basif. normal. perischizis, extrorsis v. partim dimidiatis. *Ovar.* lib., 2-20-phyllum, placentis intervalvarib. plus minus septantibus, 1-2-v. submultiloculare; stigmata placentis continua iisque numero æqualia; ovula amphi.-v. anatropa, conferta, rarius solitaria. *Capsula* ∞ -sperma, valvis +— solutis dehiscens, raro baccata et monosperma; sem. passim reniform. et strophiolata; albumen carnoso-oleos.; embryo minutus, 2-1-3-4-cotylis. Spec. 250.

A. FUMARIARIÆ: petala 4 disparia; stamina antepetalina 4 libera, sæpius 6 diadelpha, petalis antico et postico opposita, antheris 4 lateralium dimidiatis; ovula amphitr. 1-2-∞ ; succus limpidus:

1. *Fumarieæ* — monospermæ: — *Fumaria*, *Platycapnos*, *Discocapnos*.

2. *Corydaleæ*: 2-∞ -spermæ; petalum posticum basi calcarat. v. saccatum: — *Sarcocapnos*, *Cysticapnos*, *Phacocapnos*, *Corydalis*.

3. *Dicentreæ:* ∞ -spermæ; petala anticum et posticum basi calcar. v. saccata: — *Adlumia, Dactylicapnos, Dicentra.*

4. *Hypecoëæ:* stam. libera 4, petalis 3-fidis. disparibus opposita; capsula lomentacea: — *Hypecoum, Chiazospermum.*

B. PAPAVERARIÆ. Petala conformia, 4-6-8-12 v. O; stamina utplurim. ∞ -cycla, libera; ovula anatropa 1-4-∞.

5. *Platystemoneæ:* succus limpid.; stam. 1-∞ -cycla; capsula 3-4-valvis marg. seminiferis, v. syncyclium lomentaceum: — *Meconella, Platystigma, Platystemon.*

6. *Hunnemannieæ:* succ. limpid.; caps. bivalvis, valvis marg. seminiferis: — *Dendromecon, Hunnemannia, Eschscholtzia.*

7. *Argemoneæ*: latex albus v. croceus; petala nov. corrugata plicata: — *Glaucium, Chelidonium, Römeria, Stylophorum, Meconopsis, Closterandra, Argemone, Papaver, Romneya?*

8. *Bocconieæ:* latex croceus; petala O v. 8-12, nov. plana, ovula 1-4-∞: — *Sanguinaria, Macleya, Bocconia.*

FAM. 170. RESEDACEÆ.

Hbæ ann. perenn., rarius frutices, succo limpido, fol. sparsis, integris — pinnatifidis; stipulis glanduliform. <. *Flor.* 1-2-clini, ↯ irregulares, racemosi: sep. 4-5-7, basi connata, persist., nov. subimbricata; petala 4-7-2 (O), alterna, passim 3-∞ -fida, sursum majora et basi squamigera v. cucullata; stam. 3-40 e toro producto <, antheris normal.. *Ovar.* sess. v. gynopodiatum, e carpophyllis 3-6, apice stigmatosis, ↯ connatis, sæpius unilocul. et apice hians, placentis intervalvarib. v. in basi conferruminatis, ovulis plurib. <, amphi-campylotropis. *Capsula* poly-oligosperma, apice hians, raro clausa et baccata, v. syncyclium 4-6-folliculare. Sem. reniform. testa crustac., tegmine carnoso; embryo exalbum. arcuat. v. complicatus, rad. longiori v. breviori. Spec. 42. — *Caylusea, Astrocarpus, Oligomeris, Reseda, Ochradenus.*

FAM. 171. CRUCIFERÆ s. RAPHANACEÆ.

Hbæ ann.—suffrutices, succo limpido, fol. alternis<, integris —pinnatisectis. *Flor.* ☿, racemosi, raro irregulares: sepala 4, decid., nov. imbric. (v. valv.), duo lateralia, carpophyllis opposita, demissius inserta et quandoque calcarata; petala 4, alterna, spathulata<, quibusd. bi-v. pinnatifida, inæqual. v. O; stam. tetradynama (6), duo breviora antesepalina, 4 antepetalina, interdum geminatim connata v. O; antheræ normales; glandulæ hypogynæ. *Ovar.* sess. v. breviter gynopodiat., diphyllum, synstylum, placenta intervalvari, circulari, phragmifera, rarius pervia, 2-1-loculare—v. septis transversis ∞-loculare; ovula campylo-v. amphitropa, ∞ v. solitaria, pendula v. horizont., funiculata. *Siliqua* v. *silicula*, valvis 2, a replo septante seminifero solvendis, quibusd. lomentacea, drupacea, dicocca, baccata et monosperma. Sem. ∞ v. solitaria, subglob. v. compressa, funiculo lib. v. septo adnato, exalbuminosa. Embryo curvatus, cotyledon. planis v. conduplicatis, spiraliter convolutis v. biplicitis, radicula varie apposita; hinc sectio transversalis radic. et cotyledonum formulis exprimitur sequentibus O=, O||, O>>, O|| ||, O|| || ||. Species 1,600?

A. CARCERULOSÆ: ovar. 1-2-locul., 1-4-ovulatum; silicula 1-sperma, rarius plejosperma, dicocca v. elongata.

1. *Euclidieæ* — notorhizeæ, O||: *Pugionium? Euclidium*, *Ochtodium*.

2. *Isatideæ* — pleurorhizeæ, O=: *Myagrum*, *Spirorhynchus*, *Neslia*, *Sobolewskia*, *Tauscheria*, *Pachypterum*, *Isatis*, *Tetrapterygium*. . . .

3. *Calepineæ* — orthoploceæ O>: *Zilla*, *Calepina*.,

4. *Buniadeæ* — spirolobeæ, O|| ||: — *Bunias* (*Lælia*).

B. SILICULOSÆ: silicula, raro elongata v. dicocca, 2-1-locul., 1-∞-sperma, valv. 2 decid. <.

5. *Sennebiereæ nob.* — angustiseptæ plecolobeæ (O|| || || v. O>>): — *Sennebiera, Brachycarpæa; — Schouwia, Psychine.*

6. *Capselleæ nob.* — angustiseptæ platylobeæ:

a. Notorhizeæ, O||: — *Capsella, Eunomia, Hutchinsia, Lepidium, Hymenophysa, Aethionema. . . .*

b. Pleyrorhizeæ, O=: — *Thlaspi, Teesdalia, Iberis, Biscutella, Diastrophis, Megacarpæa; — Menonvillæa....*

7. *Alysseæ nob.* — latiseptæ platylobeæ:

a. Pleurorhizeæ: — *Lunaria, Ricotia, Farsetia, Meniocus, Berteroa, Aubrietia, Vesicaria, Coluteocarpus, Koniga, Schivereckia, Aurinia, Psilonema, Alyssum, Odontarrhena, Ptilotrichum, Clypeola, Peltaria, Petrocallis, Draba, (Erophila), Odontocyclus, Holargidium, Cochlearia, Tetrapoma, Redowskia, Anastatica...*

b. Notorhizeæ: — *Syrenia, Camelina, Eutrema, Aphragmus. . . .*

8. *Succowieæ nob.* — latiseptæ plecolobeæ (O>> v. O|| || ||): — *Vella, Carrichtera, Succowia.; — Subularia.*

C. SILIQUOSÆ: siliqua, raro abbreviata, polysperma < valvis deciduis.

9. *Heliophileæ* — diplecolobeæ (O || || ||): — *Heliophila, Chamira.*

10. *Brassiceæ* — orthoploceæ (O>>): — *Eruca, Diplotaxis, Moricandia, Orychophragmus, Erucastrum, Sinapis, Brassica. . . .*

11. *Sisymbrieæ* — notorhizeæ (O||): — *Malcolmia, Hesperis, Dontostemon (Andreoskia), Tonguea, Leptaleum, Sisymbrium (Leptocarpæa, Hugueninia, Alliaria), Erysimum (Conringia), Tetracme, Smelowskia, Taphrospermum, Braya....*

12. *Arabideæ* — pleurorhizeæ (O=): — *Mathiola, Andrzeiowskia, Cheiranthus, Nasturtium (Roripa), Barbarea, Turritis, Pachyneurum, Arabis, Stevenia, Parrya, Macropodium, Cardamine, Pteroneuron, Dentaria. . . .*

D. LOMENTOSÆ: ovar. 1-2-loculare, strangulatum <; siliqua v. silicula uni-pluriarticularis, articulo infero passim sterili.

13. *Chorisporeæ* s. *Cakilineæ* — pleurorhizeæ (O=): — *Cakile*, *Chorispora*, *Cordylocarpus*.

14. *Anchonieæ* — notorhizeæ (O||): — *Gioldbachia*, *Anchonium*, *Sterigma*, *Cryptospora*, .

15. *Raphaneæ* — orthoploceæ (O>>): — *Fortuynia*; *Crambe*, *Rapistrum*, *Enarthrocarpus*, *Raphanistrum*, *Raphanus*. . .

16. *Erucarieæ* — (O ¦ || : —spirolobeæ *Erucaria*.

FAM. 172. CLEOMACEÆ s. CAPPARIDEÆ.

Hbæ ann. frut. arb., succo limpido, foliis alternis <, integris v. 3-7-dactyliis, quibusd. stipulatis. *Flores* monoclini <, solitar. v. racemosi, passim irregulares: sepala 4, 2, 8, lib. v. connata, quandoque coronifera, nov. imbric. v. valv.; petala 4, 0, 8, 5, alterna, spathulata <, sæpe inæqual.; nov. imbric. v. distantia; stam. 1, 4, 6, 8, 12-∞, sæpe basi in torum varie effiguratum confluentia, nov. inflexa, antheris normalib. . *Ovarium* gynopodio +— longo suffultum, 2-4-5-8-3-1-phyllum, placentæ intervalvares, superne in stylum v. stigmata sessilia connatæ, ovulis amphi-campylotropis, confertis, uni-pluriseriatis. *Capsula* bivalvis < replo seminifero persistente — v. *bacca* indehisc., sæpe corticata. Semina ∞, pauca et solitaria, appensa v. in baccatis nidulantia, testa +— dura, tegmine tumido; embryo exalbumin., +— curvat. v. spiralis, rad. brevi v. longa. Spec. 345.

a. *Cleomeæ*: capsula dehisc. siliquæformis <, stam. 6-1-12, plura, sep. et pet. 4 <; hbæ ann. suffrut. (arb.) fol. 1-3-7-dactyliis: — *Cleomella*, *Gynandropsis*, *Cleome*, *Physostemon*, *Polanisia*, *Isomeris*. . . .

b. *Cadabeæ*: bacca indehisc., stam. 4-8; hbæ, frut. arb. — *Tovaria*, *Steriphoma*, *Schepperia*, *Cadaba*. . .

c. *Cappareæ:* bacca indehisc.; stam. 12—plura (8): — *Tylachium*, *Niebuhria*, *Mœrua*, *Capparis*, *Morisonia*, *Cratæva*..... *Singana* et *Roydsia*??

? *Moringeæ.* Arbores Asiæ, sapore raphaneo, foliis bi-tripinnatis, stipulis deciduis; *Flores* ☿, fere perigyni, irregulares, racemoso-paniculati: sepala 5 basi connata, nov. imbric.; petala 5 angusta, nov. imbric.; stam. 8-10, basi subconnata, antesepalina breviora et passim ananthera; antheræ unilocul. introrsæ. *Ovar.* pedicellat. 3-phyllum, synstylum, unilocul., placentis 3, ovulis ∞ anatrop. pendul.. *Capsula* longa, 3-valvis, mesocarpio crasso fungoso; semina medivalvia ovato-trigona, aptera v. alata, exalbumin.; embryo rectus, amygdalinus: — *Moringa* Burm. (Capparidcis anomalis an Bixaceis affinior? nec Leguminosis).

## *Ordo II. Rutastra.*

Carpophylla follicularia 1-∞-ovulata, in receptaculo verticillata, quibusd. connata v. in gynophoro spicata, raro solitaria. Flores passim irregulares, diclini v. depauperati; folia raro stipulata.

### FAM. 173. PÆONIACEÆ *nob.*

Hbæ, frut. arbores, quædam scandent., sæpe acres, venenatæ v. aromaticæ, foliis alternis, rarius oppos., integr. v. varie sectis, petiolo basi vaginante < quibusd. stipulato v. articulato. *Flores* 1-2-clini, cymoso-solitar. v. conferti, passim irregulares v. involucrati: sepala 2-3-5-6-15, nov. sæpius imbricata, quibusd. connata v. petaloidea; petala 2-20-0, alterna v. 2-3-cycla, quibusd. minuta, tubulosa, calcarata v. bilabiata; stam. poly-di-monocycla, passim brachynema, antheris perischiz., extrors. v. normalib., connexivo +— crasso. *Gynoeceum* axigenum multiplex, rarius simplex, carpophyllis 1-3-5-∞, verticillatis v. in gynophoro spicatis, lib. (v. con-

natis); ovula anatropa <, erecta, horiz. v. pend., solitar. v. ∞, ad suturam ventral. biseriata. *Syncarpium* v. *syncyclium* e caryopsid. v. nuculis, passim rostrat. v. caudatis, v. e folliculis ∞-1-spermis, quandoque in capsulam connatis v. baccatis. Sem. micrembrya, quibusd. arillata, albumine corneo v. carnoso. — Species 1592 notæ, cujus numeri fere $\frac{2}{3}$ tribus prima tenet.

Trib. I. RANUNCULARIÆ: — herbaceæ, rarius frutesc. v. arboresc., foliis sæpius palmati-pinnatisectis, Clematideis oppos. v. 3-4-na (= involucro Anemones); sep. 3-15, petala 2-20-0, normal. v. polymorpha; stam. ∞-2-1-cycla, lib.; folliculi 1-∞-spermi, sæpe ad caryopsides reducti; rarius baccati:

A. Utriculosæ: caryopsid. v. folliculi 1-sp. indehisc.

a. *Ranunculeæ:* perigon. duplex, definitum <, petala basi nectarifera; sem. erecta, stam. 5-6-$_{\infty}$: — *Myosurus*, *Ceratocephalus*, *Casalea*, *Ranunculus*, *Oxygraphis*, *Callianthemum*, *Ficaria*...

b. *Adonideæ:* sep. 5-6; pet. 5-15, plana; sem. pendula: — *Adonis*, *Hamadryas*, *Knowltonia*.

c. *Anemoneæ:* sep. 5-15, colorata <, nov. imbric.; pet. O<, sem. pend., involucrum 3-phyll. v. O; utriculi passim caudati: — *Hepatica*, *Anemone*, *Pulsatilla*; *Thalictrum*..

d. *Clematideæ:* frut. scand. <, fol. oppos. v. ternis, quaternis (involucra phyllomorpha), ternati-pinnati-bipinnatisectis v. simpl. aut cirrhosis; sep. 4-5-8, nov. valv. v. induplicata, pet. O v. parva 6-12; utriculi caudati <, sem. pend.: — *Clematis*, *Atragene*, *Naravelia*.

B. Folliculosæ (folliculis raro 1-spermis):

a. *Helleboreæ:* sep. 5-15 petaloidea <, pet. parva < polymorpha, nectarifera v. O; folliculi quibusd. in capsulam connati: — *Caltha*, *Hegemone*, *Trollius*, *Eranthis*, *Helleborus*, *Coptis*, *Isopyrum*, *Garidella*, *Nigella*, *Aquilegia*...

b. *Aconiteæ:* sepala 5 dissimilia, petaloidea; petala 2-4-5, minora, polymorpha: — *Delphinium*, *Aconitum*.

c. *Actæeæ:* sep. 4-5-3; pet. O v. 2-5, parva, raro nectarifera; folliculi 1-∞-spermi, quibusd. baccati et solitar., stam. 5-10-∞, partim sterilia; folia bi-tri-ternatim secta v. pinnata, palmata: — *Trautvetteria*, *Actinospora*, *Botrophis*, *Actæa*, *Cimicifuga*, *Xanthorhiza*, *Hydrastis?*

d. *Pæonieæ:* calyx 5-merus, durabilis; pet. 5-10, magna, plana; folliculi 2-5; folia uni-bi-ternatisecta: — *Pæonia*.

Trib. II. DILLENIARIÆ. Arbor. frut. exotici, quædam scand. aromat. v. hbæ, fol. integris, passim dentatis, costat. et coriac., rarius stipulatis (perulæ ??), endadenis, oppos. v. lobatis; fl. 1-2-clini, sæpe magni, perigonio 5-4-mero v. 3-2-mero, di-plejocyclo v. O; stam. 5-∞, gracilia v. cuneata, quibusd. adelphica v. imbricata; folliculi 1-∞, 1-∞-spermi, passim baccati v. connati; sem. arillata <.

a. *Dillenieæ:* hbæ caudicatæ, frut. arbores, fol. linear. v. ellipticis, integris, passim dentat. et costatis, raro stipulatis (= Magnoliæ); *flores* solitar., sæpe magni (Pæoniæ), rarius conferti: sep. 5 (6-∞) durabilia, æqual <; pet. 5 (3-2), stam. 5-7-10-∞, brachynema, quibusd. unilateral., adelphica, antheris ⊣— longis, partim acroschiz. v. abortivis; ovaria ∞, pauca v. solitaria, ovulis erect. 1-∞; folliculi 1-∞-spermi, interd. baccati v. connati: — *Pachynema*, *Hemistemma*, *Pleurandra*, *Candollea*, *Adrastea*, *Hibbertia*, *Acrotrema*, *Wormia*, *Capellia*, *Colbertia*, *Dillenia*. . . .

b. *Delimeæ*: frutic. passim scand. v. arbusc., fol. ellipt. integerrim. v. dentatis; flores thyrsoid. parvi, rarius solitarii: sep. 3, 4-5, plura, sæpe inæqual. et durabilia; pet. 5-3-1; stam. ∞, durab. <, filam. elongato-clavatis, anther. ellipsoid.; ovaria 1-4, ovulis erect. 1-5; folliculi 1-4, quibusd. baccati: — *Curatella*, *Doliocarpus*, *Empedoclea*, *Davilla*, *Delima*, *Tetracera*. . .·

c. *Illicieæ:* frutic. arb., ramulis passim peruliger. v. acrophyllis; fol. integerr., endadenis et sempervir. <, flor. solitar. v. confert. (nudis): gynophorum breve, sepala 3-2 caduca, pet. 6-30-2, mono-polycycla; stam. 6-∞, platynema, anther. ovat. perischizis?; ovaria 1-2-8, stigmat. sessilib. <, ovulis 1-plurib., erect. v. pend.; follicul. 1, polysperm. v. 2-8, in syncarpium verticillatum conferti, 1-oligospermi, duri v. baccati; sem. exarill. nitida: — *Tasmannia*, *Drimys*, *Illicium*, *Trochodendron*..

d. *Magnolieæ:* arbor. excelsæ v. frut. perulis stipulaceis et spathaceis geminis < caducis, foliis integerrim. costato-venosis, raro 3-4-lobis; *flores* sæpius magni (Nymphææ <) solitarii, termin. v. axillares: gynophorum (anthokionis) elongatum, gerens: sepala 3-4, petala 6-12 v. 24-32, in corollas alternantes 2-4 v. 6-8 digesta, antheras sessil. v. brachynemas, ∞-cyclas, embricatas < subnormales, — et ovaria ∞ spicata, stigm. sess. < ovulis 2-9; *syncarpium* strobiliforme e folliculis duris 1-2-plejospermis, integris, samaroid. v. bivalv., rachicidis; sem. sessil. v. in funiculis longis e syncarpio pendula, carnoso-tunicata <: — *Talauma* (flor. fragr.), *Aromadendron*, *Magnolia*, *Manglettia*, *Michelia*, *Liriodendron*.

Trib. III. ANONARIÆ. Arb. frut. exotici, passim aromat. acres, fol. estipul. < integerrim <, costato-venosis; *flor.* 1-2-clini, lateral. solitar. v. conferti: sep. 3, lib. v. connata; pet. 3-6-9, nov. valv., in corollas 1-3, alternantes digesta, raro coalita v. 0; antheræ ∞ <, in gynophoro v. toro sess. v. brachynemæ, connexivo cuneato v. ellipsoid., loculis 2 extrorsis, innatis; ovaria plura, raro solitar., stigm. subsessili, ovulis 1-2-plur., erect. v. horizont.. *Syncarpium* e gynophoro ampliato < et folliculis 1-∞-spermis, passim baccatis et conferruminatis, v. crassis, lomentaceis; testa nitida, exarill., albumen dense carnosum, ruminatum <.

a. *Bocageæ:* stam. 6-12; ovula 2-8: — *Bocagea*, *Poppowia*, *Orophea*...

b. *Xylopieæ:* stam. indefin., ovula pauca v. ∞ : — *Xylopia*, *Cælocline*, *Uvaria (Unona)*.....

c. *Anoneæ:* polyandræ, 1-2-ovulatæ: — *Anaxagorea*, *Artabotrys*, *Guatteria*, *Duguetia*, *Anona*, *Rollinia*.....

d. *Schizandreæ:* frut. scand., glabri, mucosi, fol. quarund. denticul. v. endaden.; flor. diclini, odori, perigonio 3-4-cyclo, ternario, anther. et ovariis ∞, passim coalitis et illis acroporis; syncarp. ex acinis 1-2-spermis; albumen æquabile?: — *Kadsura*, *Sphærostemma*, *Schizandra*.

Trib. IV. Lardizabaleæ. Frutic. volubiles <, glabri, foliis estipul. alternis, di-tri-polydactyliis v. bi-triternatis, foliolis integerrim. v. dentatis. *Flor.* abortive mon-dioeci, axillar., perulati, racemosi, raro solitarii, albi, purpur. v. lutei, perigonio mono-tetracyclo: sep. 3, nov. subvalvata, pet. 3-9 v. O.; stam. 6, petalis internis minoribus, ni absint, opposita, monadelpha, rarius libera, antheris extrorsis (Burasaiæ introrsis), adnatis connexivo, passim apiculato. *Ovaria* 3, raro 6-9-tricycla, unilocul., stigm. subsessili, peltato v. clavato, ovula ∞, parieti alveolato v. tuberculato 2-∞-seriatim inserta, atropa v. ana-campylotropa, raro solitar. pendula. *Syncyclium* e folliculis 3-plurib., poly-oligospermis, utplurim. baccatis, raro drupis 1-spermis; sem. nidul. <, testa cartilag., albumine carnoso-corneo, embr. minuto <, radic. majori.

a. Monoecæ, asiaticæ: — *Akebia*, *Holboellia*, *Stauntonia*, *Parvatia*.

b. Dioecæ, americanæ v. madagascarienses: — *Lardizabala*, *Boquila*; *Burasaia*.

FAM. 174. RUTACEÆ Aug. de St. Hilaire.

Hbæ, frut. arb., passim balsamicæ, fol. altern. v. oppos., integris, decomposito-lobatis v. pinnatis 1-∞-jugis cum v. sine impari, passim endadenis et stipulatis. *Flores* monoclini

v. abortu diclini, utplurim. regulares, cymoso-conferti v. solitar., termin. v. axillares: sepala 5-4-3-6, lib v. connata et durabilia, nov. imbric. <; petala alterna, sepalis majora v. minora, quibusd. connata, nov. imbric. v. convolutiva, raro valv.; stam. 1-2-3-cycla, partim abortiva, inæqual. v. monadelpha, anther. basi-dorsifixis, normal.. *Ovaria* gynophoro brevi et toro hypogyno < carnoso stipata, 5-2-1-12, lib. v. —+— connata, stylis sursum v. perfecte coalitis, raro lib. v. O, ovulis 2-4-1-∞ et biseriat., ana-amphitropis, raro atropis. *Syncyclium* e coccis 5-3 (1), passim endoschiz. et endocarpio cartilagin. solubili, quibusdam baccatis, drupac. v. samaroideis, v. capsula 3-5-12-locular., loculi-septicida. Sem. solitar. v. conferta, appensa <, —+—curvata; embryo axilis, albumini carnoso < subæquilongus, sæpius phyllolob. et viridis, radicula æquilongâ v. breviori, — aliis exalbuminosus. (Fontenellea brasil. omnium tribuum particeps). Spec. 620.

Trib. I. RUTARIÆ. Hbæ — fruticuli, fol. altern. <, integris v. decomposito-lobatis; flor. ☿, 3-5-meri, lutei, albi, calyce durabili <, petalis passim concav. et undulatis, stam. 1-2-3-cyclis; ovaria 2-5, semiconnata, stylis sursum v. prorsus coalitis, ovul. 2-4-plurib. *Capsula* 3-5-locul., endoschiza v. loculicida, endocarpio cartilag., raro solubili; sem. solitar. v. conferta, appensa, curvata, testa crustac. et scrobiculata <, albumine carnoso: — *Tetradiclis, Peganum; Boenninghausenia, Haplophyllum; — Cneorum?*

Trib. II. DIOSMARIÆ Frut. arb. hbæ, fol. simpl. v. pinnat. 1-∞-jugis; *Flor.* ☿ < albi, rubent. (flavi), quibusd. irregular. apetali, calyce dentato, v. corolla sympetala (longa) et nov. valv.; stam. mono-rarius dicycla, partim abortiva, petalis adnata et inæquilonga; *ovaria* 5-3, lib. v. basi connata, stylis sursum coalitis <, ovulis 2 (4) pendul. v. altero erecto. *Syncyclium* e coccis 5-3 (1), sæpius monosperm., scabris et cornutis, endocarpio solubili, elastice bilo-

bo; testa cartilag. lævis, albumen carnos. v. O, embr. ↓— curvatus, cotyled planis v. rugosis:

a. *Dictamneæ:* fol. alterna, impari-pinnata, flor. irregul., stam. dicycla, omn. perf., ovula 4, sem. nitida atra, embr rectus c. albumine: — *Dictamnus.*

b. *Boronieæ:* fol. opp. v. alt., simpl. v. 1-∞-juga; stam. 2-1-cycla, omnia perfecta; ovula 2 superposita; testa crustacea, embr. Dictamni: — *Zieria, Boronia, Cyanothamnus, Eriostemon, Crowea, Diplolœna, Correa, Hügelia* (R. Br.)....

c. *Diosmeæ*: fol. simpl., alt. v. opp.; stam. 1-cycla et parastemon. alterni <; ovula 2 superpos. v. collateralia; testa coriac., embr. rectus, exalbum. <: — *Calodendron, Adenandra, Diosma, Barosma, Agathosma, Empleurum,...*

d. *Cusparieæ:* fol. 1-2-3-dactyl., sæpius altern; stam. 1-cycla, partim plura et ananthera; ovula bina superpos. <, testa coriac. <, albun. sæpe O; embr. rect, cotyled. planis v. rugosis et obvolutivis ac radicula inflexa: — *Pilocarpus, Metrodorea, Esenbeckia, Evodia, Melicope... — Monnieria, Ticorea, Erythrochiton, Galipea, Almeidea....*

Trib. III. XANTHOXYLARIÆ. Arb. frut. passim aculeati, fol. estipul., alt. v. oppos., simpl. v. alato-abrupte-v. impari-pinnat., foliolis alt. v. oppos.. *Flor.* sæpius abortu diclini, regular. parvi < 5-5-meri, raro apetali; stam. sæpius 1-cycla et squamulis adfixa; ovaria 5-1, ovulis pend. 2 (1-4), stylis apice coalit. v. lib. et O. *Cocci* 2-5-1, lib. v. coaliti, 1-2-spermi, passim pedicellati, bacc. drupacei v. samaroid., endocarpio raro solubili; testa lævis, albumen carnos. v. O, radic. brevior.

a ? *Coriarieæ:* ramis 4-gonis, gemmis perulatis, fol. oppos. v. ternis, subsessil., integr, 5-5-nerviis; flores 1-2-clini, racem. 5-meri, 10-andri, petal. parv. accresc.; ovaria 5 antesepal., ovulis solitar. anatrop., stigm. 5, central., longa; nucu-

læ 5, calyce et petalis carnosis obvallatæ, embryo exalbumin. fere amygdalinus: — *Coriaria.*

b. *Xanthoxyleæ:* fol. sæpius pinnata et flor. diclini., 3-5-meri, ovulis ana-amphitrop. 2 (4); cocci 1-5, lib. v. coaliti, passim baccati v. drupac., sem. passim albuminosa: — *Acronychia, Pitavia, Brucea, Xanthoxylon, Toddalia, Vepris, Ptelea; Ailanthus, Spathelia, Bischoffia?.....*

Trib. IV. ZYGOPHYLLARIÆ. Hbæ.-arb., fol. stipulat. oppos. <, 1-∞-jugis sine v. c. impari, rarius carnosis, punctatis, alterne-v. decursive-pinnatis, pinnatifidis v. simplic., *Flor.* ☿ et regular. <, sæpius solitar. axillares et toro lobato; stam. dicycla, sæpe squamulis suffulta et sepalina longiora, raro didynama; ovaria 4-5 (-12) connata < synstyla v. astyla, ovulis 2∞-1, pend. ana- v. atropis. *Capsula* 4-12-locularis, loculi-septicida, quibusd. septulis transversis plurilocellata, aliis superne eseptata, v. baccata, alata, spinosa, raro syncycl. utriculare. Sem solitar. v. conferta, pend., raro erecta v. compressa: testa membr. lævis, album. cartilag. v. O.

a. *Tribuleæ*, exalbuminosæ: — *Liebersteinia; Kallstrœmia, Tribulus.*

b. *Zygophylleæ* — albuminosæ: *Melianthus;* — *Fagonia, Röpera, Zygophyllum, Larrea, Porliera, Guajacum.....*

FAM. 175. SIMABACEÆ *nob.*

Arb. frut. exotici <, succo amaro v. adstring., fol. altern. v. oppos., simpl. v. composit. epunct. passim stipulat. *Flores* 1-2-clini, cymoso-racemosi, thyrsoid. v. solitar., pedicellis articulatis, gynoph. et toro hypogyno +— conspicuis: sepala 4-5 (6), +— connata, nov. imbric.; pet. alterna, raro dupla, nov. imbric. v. convolutiva; stam. 1-2-∞-cycla, antheris norm. <, rarius extrorsis v. acreporis. *Ovaria* stylifera 4-5 (-2-20), libera v. connata, ovula solitar. appensa v. ascend., anatropa <, rarius 2-plura, 1-2-seriata. Drupæ v. baccæ 4-6-1-∞, lib. v. cohærentes, 1-spermæ, rarius capsula

v. folliculi 2-3, oligospermi; sem. plerumque exalbuminosa, cotyled. carnos. v. foliac., rad. brevi v. maxima. — Tribus an familiæ parvæ 4, Rutaceis et Sapindaceis intermediæ. Spec. 140.

I. OCHNACEÆ Planchon. Arb. fruticuli, fol. altern. integris, raro pinnatis, passim serrat. costat. et coriac.; stipulæ, perulæ et bracteæ scariosæ; petala 4-5-10, flava <, stam. di-plejocycla, antheræ extrorsæ v. introrsæ, passim elongatæ, coriac., angulatæ, annulato-rugosæ et acroporæ; ovaria 3-5-10, synstyla, ovulis solitar. v. confertis, anatrop. adscend. v. appensis. Capsula polysperma v. baccæ 4-5-10-1, monospermæ, gynophoro ampliato insidentes; testa membr., album. carn. v. O, radic. inf. v. supera.

a. ? *Luxemburgieæ* Planchon: ovarium 3-5-phyll. 1-5-loculare, capsula ∞-sperma, septicida, semina gracilia, albuminosa: — *Luxemburgia*, *Godoya*, *Cespedesia*, *Blastemanthus*.

b. *Ochneæ:* baccæ 1-spermæ connatæ v. gynophoro disjunctæ, sem. plerumque exalbumin.: — *Euthemis; Elvasia*, *Ochna*, *Gomphia*.

II. SIMARUBEÆ. Fol. estipul., pinnata, integerrima < raro simplicia; flor. 4-5-meri, stam. dicycla et squamulis suffulta <, anth. norm. < dorsifixis; ovar. 4-5 acro-synstyla, ovulis solitar. appensis. *Drupæ* 1-5, ad gynophorum verticillatæ, passim exsuccæ, compr. magnæ; testa membr., album. O, embryo amygdalinus: — *Castela*, *Quassia*, *Simaruba*, *Picræna*, *Simaba*, *Samadera;* — *Nima* et *Harrisonia* — an sequentibus affiniores?

III. STAPHYLEINÆ. Arb. frut., fol. stipulat. opposit. rarius altern., pinnat. uni-plurijugis, serratis; fl. 5-meri, 5-andri, anther. norm. cordatis, toro crenulato; *ovaria* 2-3, basi v. omnino connata, stylis lib. v. subcoalitis, ovulis plurib. v. solitar., ascend. v. horiz. *Capsula* 1-2-3-follicularis

v. *bacca* 2-3-locular.; sem. subglob., basi truncata, testa ossea nitida, album. carnoso parco v. O, embr. amygdal.: — *Turpinia, Euscaphis, Staphylea.*

IV. RHIZOBOLEÆ. Arb. Americæ, fol. estipul. oppos., 3-5-dactyliis, coriac. serratis; flor. ☿, interd. maximi, sep. 5-6, pet. altern. v. 8; stam. ∞ e toro carnoso hypogyno, basi monadelpha, gracilia, anther. norm. dorsifixis; ovar. sess., 4-5-(20)-loculare, kionide crassa, stylos liberos simpl. flexuosos < gerente, ovulis solitar. hemianatropis, medifixis, micropyle supera. *Drupæ* 5-1, ad axin cohærentes, putam. scabro, carne oleosa, — v. *bacca* corticata ∞-locular.; semen reniforme (magnum), testa fungosa; embr. exalbum. conduplicat., microlobus, radicula maxima, crassa, supera: — *Caryocar, Anthodiscus?*

FAM. 176. SAPINDACEÆ *nob.*

Arb. frut., raro hbæ, quædam ramis scandentib. v. cirrhis pedunculatib. præditæ, foliis oppos. v. altern., simpl. palmat., 1-9-dactyliis v. pinnat. et decompositis; petiolis basi articulat. <. *Flor.* 1-2-clini, cymoso-racem. v. thyrsoidei, termin. v. axillar., passim irregular., perigonio utroque nov. imbricato: sepala 5-4 (6-9), -+— connata; torus hypogyn. c. gynophoro confusus, annular. v. lobat., antice v. post. productus; petala alterna, v. partim abortiva, duplicata et O; stam. 4-7, 8-10 (20-2), partim monadelpha, abortiva, inæqual. v. unilateral., anther. basi-dorsif. normal. <. *Ovaria* 3-2-4, plus minus connata, partim abortiva, stylis central. lib. v. coalit., ovulis amphitrop. solitar. v. 2-3-plurib., pend. v. ascend.. *Fructus* drupac. samaroid. v. capsula 1-4-locul., septi-v. loculicida v. indehiscens. Sem. solitar., bina v. plura, exalbum., testa -+— crassa, quibusd. hilus latus et arillus; embryo conduplic. v. circinat., rarius rectus, cotyled -+— crassis. Spec. 1000?

Trib. I. MALPIGHIARIÆ. Arb. frut. quæd. scand. v.

stipulatæ, passim pilis malleiform., urentib. v. simpl. nitidis insignes; foliis opposit. integris, quibusd. altern. dentat. v. lobatis; *flor.* utplurim. regular. et termin., calyce 5-mero, durabili, sæpius glandulis extern. 5 v. 10 obsito, nov. subvalvato; petal. passim spathulat. et denticulat. exsertis; stam. dicycla, passim monadelpha et antepetalina breviora v. abortiva; antheræ norm., quibusd. acradenæ, dorso villosæ v. alatæ. *Ovaria* 3-2, ad axin ⊣— coalita, ovulis solitar. appensis. *Samaræ* v. *drupæ* 1-2-3, lib. v. conn.; testa membran., cotyled. ⊣— crassæ, exteriori sæpe majori:

a. *Gaudichaudieæ* — mejostemones (stam. fertilia 2, 3, 5, 6, et flor. heteromorphi): — *Camarea, Janusia, Schwannia, Gaudichaudia, Dinemandra.*

b. *Hiptageæ* — pleuropterygiæ (flor. homomorphi, diplostemones - et omnib. sequentibus): — *Jubelina, Hiræa, Triaspis, Hiptage, Triopteris....*

c. *Banisterieæ*, notopterygiæ: — *Heteropterys, Lophopteris, Banisteria, Stigmaphyllon, Thryallis.....*

d. *Malpighieæ* — apterocarpæ: — *Malpighia, Bunchosia, Burdachia, Pterandra, Galphimia, Spachea, Byrsonima.....*

Trib. II. ACERARIÆ. Arb. frut., succo quarund. saccharino v. lacteo, fol. estipul. perulatis, opposit. palmatilobis, rarius integris v. 1-2-jugis c. impari; flor. regular., calyce 4-5-6-8-fido, petal. O v. alternis, parvis, concolorib. <; stam. 8-4-12, anth. dorsifixis. Ovaria 2 (3), compressa, axi gracili, fissili, styligero adnata, ovulis binis appensis. Samara duplex <: sem. solitaria (2), cotyled. plicatæ foliaceæ: — *Acer, Negundo.*

Trib. III. PAVIARIÆ. Arb. frut. fol. estip. opposit. 5-9-dactyliis, raro pinnatis; flor. irregular., calyce 5-mero, pet. altern. v. antico deficiente; torus postice productus; stam. 7-6-8-9, declinato-ascendentia. Ovar. 3-loculare, synstylum; ovula bina, superius pendulum, inferius ascend.. Capsula coriac.

3-2-1-locular., loculicida; sem. solitaria, testa coriac. nitida, hilo lato; embr. conduplic., cotyled. crassis, hypogeis: — *Aesculus (Pavia), Ungnadia?*

Trib. IV. SAPINDARIÆ. Arb. frut, passim scand., raro herbæ (= Erodio), fol. alternis, raro oppos., pinnat. ternatis, decomposit. v. unifoliolatis, rarius stipulatis; *flor.* sæpe irregular., minuti, v. cirrhomorphi: sep. 5, ⊣— connata, duo postica sæpe majora v. coalita, anticum deflexum; torus annularis v. lobatus et antice productus; pet. 0 v. alterna, passim basi squamigera (duplicata) v. postico deficiente; stam. 8-10 v. pauciora, raro plura, (13-20) sæpe unilateral. et inæquilonga; antheris ellipsoid. dorsifixis <. *Ovar.* 3-2-1-loculare, synstylum <, passim excentricum, ovulis solitar. rarius 2-3-plurib., utplurimum ex axi medio æscendent.. *Capsula* 1-4-locular., ⊣— dura v. samaroidea, varie dehisc. v. indehiscens; sem. solitar. erecta, rarius gemina, plura v. pendula, sæpe arillata v. hilo lato prædita; quibusd. embryo rectus v. cotyled. plicatæ v. coalitæ:

a. *Paullinieæ: nob.* herbæ, frut. passim scand. et cirrosi, rarius arbores, flor. irregular., appendices petalor. sæpe majores, torus in glandulas discedens, sexualia excentralia, ovula solitaria: — *Cardiospermum*, *Urvillea*, *Seriania*, *Paullinia*, *Enourea*, *Schmidelia*, *Moulinsia*, *Bridgesia*, *Valenzuelia*..

b. *Sapindeæ* nob., arbores, rarius frutic., cirrhi 0<, flor. subregulares, torus discoid., (crenat.), sexualia centralia, ovula solitaria <: — *Thouinia*, *Toulicia*, *Prostea*, *Sapindus*, *Cupania*, *Talisia*, *Nephelium*, *Melicocca*, *Hypelate*..... *Suriana?*

c. *Dodonæeæ:* arbusc. frut. non scand., sæpe apetali, ovarii loculi 2-3-pluriovulati, embryo spirolobus: — *Diplopeltis*, *Dodonæa*, *Alectryon*, *Llagunoa*, *Kölreuteria; Xanthoceras?*..

d. *Meliosmeæ.* arbor. flor. irregul., diandris c. parastemon. 3, antheræ abnormes, torus trigonus, ovar. 3-locul., 6-ovulat.; drupa 1-sperma: — *Meliosma.*

## *Ordo III. Sidastra.*

Gynoeceum e carpophyllis follicularib. 1-∞-ovulatis, ⊣— connatis, kionide gracili, gynophoro v. gynopodio præditum; flores plerumque monoclini et regulares; androec. sæpe 1-5-adelphum v. in torum hypogynum tumens. Folia plurimis stipulata.

FAM. 177. CISSACEÆ (Ampelideæ).

Arb. frut., sæpe scandent. nodosi, fol. stipulat. <, imis oppos., superior. alternis, integris, palmatis, v. 3-7-dactyliis et pinnatis. *Flor.* 1-2-clini, minuti, cymosi, thyrsoid.: calyx cupularis. 4-5-dent.; pet. alterna, nov. valv. v. imbric.; stam. 4-5 antepetalina, brevia, anther. norm.; torus hypogyn. crassus <. *Ovar.* synstyl., bilocul., ovulis gemin. erect. anatropis. *Bacca* bilocul. < 1-4-pyrena; tegmen rugosum <, albumen cartilag., embr. brevis. Spec. 260. — *Cissus (Ampelopsis), Vitis, Pterisanthes.*

FAM. 178. CELASTRACEÆ.

Arbusc. frut., interd. scand., ramis quarund. 4-gonis v. spinesc., fol. altern. v. oppos., integris (coriac. v. dentat. <), stipulæ caduc. v. 0. *Flor.* 1-2-clini, regul., axillar., cymosi, thyrsoid.: sepala 4-5, ⊣— connata, nov. imbric.; pet. alterna v. 0, stam. 4-5, alterna, toro crasso, ovarium cingenti, extus, intus v. margini inserta, antheræ norm. basi-dorsifixæ. *Ovar.* 2-3-5-locul., ovulis erect. anatrop. solitar. v. gemin., raro plur. *Fruct.* drupac., samaroid. indeh. v. capsularis loculicidus; sem. sæpius solitar. et arillata (arillodium Planchon), testa membr. v. crust., album. carnoso; embryo ⊣— longus, phyllolob., rad. tereti. Spec. 260.

a. *Elæodendreæ*: drupa ⊣— succulenta: — *Myginda, Elæodendron, Hartogia, Frauenhofera, Wimmeria, Ptelidium....*

b. *Evonymeæ:* capsula loculicida: — *Pterocelastrus, Maytenus, Celastrus, Polycardia, Evonymus, Putterlickia....*

FAM. 179. HIPPOCRATEACEÆ.

Arb. frut., ramis interd. cirrhomorphis, fol. opposit. integris, coriac. <, petiol. basi articul., stipulis caducis. *Flor.* ☿ regul. parvi, cymoso-racem. v. thyrsoid., axillar., perigon. utroque nov. imbric., calyx 5-partit., pet. alterna, stam. 3, basi dilat. demum deflexa, anther. subuniloc., perischiz. v. extrors. Torus crass. intermedius, cingens *ovarium* synstyl. 3-locul.; ovula ana- v. hemianatropa, pauca v. ∞, 1-2-3-seriata. *Folliculi* 3-2(1), basi cohærentes — v. *baccæ*, passim solitar. et 1-spermæ. Sem. pauca v. solitar. oblonga, compressa, basi alata (funiculus?), in baccatis subglobosa; album. O, embr. amygdalin. Spec. 86. — *Hippocratea*, *Tontelea*, *Salacia (Calypso)*..

FAM. 180. TERNSTROEMIACEÆ.

Arb. frut. exotic. tropici <, mucilagin. v. tannici, fol. altern. integris, passim dentat. costat. coriac. et subtus sericeis, raro opposit., stipulatis, endadenis v. palmatifidis. *Flor.* monoclini <, subregular., axill. v. termin., cymosi-solitarii — thyrsoid., sæpe magni, albi, rubri (flavi), peduncul. basi articulat.: sepala 3-4-5-plura, ⊣— connata, imbricata, sæpe inæqualia, et persist.; petala alterna, rarius antepetal., perigyna v. plura, passim inæquilatera v. basi connata, nov. ⊣— contorta; stam. 12-∞, lib. v. 1-5-adelpha et basi petalor. adnata, antheris didym. v. longis, basi-dorsifix., normal. v. perischiz. et extrorsis, connexivo ⊣— crasso. *Ovar.* lib. v. toro brevi adnat., 2-3-5-10-loculare, septis raro incompletis, plerumque synstyl.; ovula anatropa v. campylo-amphitr. pauca v. multa ad placentas porrectas sæpius pendula. Capsula 2-5-(10)-locular., loculi-septicida v. indehisc. et baccata, drupacea. Sem. ∞ v. solitar., arcuata, subglob. v. compressa et alata, quibusd. arillata, testa crust. v. membr., album. carnoso < v. O; embryo homotrop., cotyl. ⊣— crassis, rad. brevi v. longa. Spec. 130.

a. *Anomalæ:* fol. alt. palmatif. bistipul.; flor. 5-meri, lutei, anth. basif. acroporæ, septa ovarii 3-5 incompleta, ovula amphitr. ∞, capsula, sem. reniform. albuminosis: — *Cochlospermum.*

b. *Frezierеæ*: calyx 5-mer. bibracteol., lib. v. adnatus; pet. 5 (6), quibusd. antesepal. et basi cohær.; antheræ basifixæ, nerm.?, ovar. 2-5-loc. synstyl. <, ovula campylotr. 2-∞; capsula ruptilis v. bacca, drupa oligosp.; sem. aptera, embr. teres, bicruris, albumine O v. carnoso: — *Anneslea, Visnea, Ternstroemia, Eurya, Cleyera, Freziera, Lettsomia...*

c. *Sauraujeæ:* fl. 5-meri ebract., antheræ dorsif. sagittatæ, basiporæ <; ovar. 5-loculare < schizostylum, ovulis anatrop. ∞; capsula apice loculicida; sem. aptera, parva, albuminosa; embr. teres: — *Sauraja (Apatelia).*

d. *Gordonieæ nob.:* fol. raro opposit. v. stipulata; sep. 4-5, pet. alterna, raro 9 v. basi connata; antheræ dorsi-basif.; ovar. 3-5-plurilocul., ovul. anatrop. (?) ∞-1; caps. loculi-v. septicida, sem. alata <, exalbum. rectembr. <, cotyled. planis v. plicatis: — *Architæa, Caraipa, Marila, Laplacea, Bonnetia, Kielmeyera; — Stuartia (Malachodendron), Gordonia.*

e. *Camellieæ:* fol. perulata, estipul., sepala 3-9 imbric., pet. 5-9, inæqu. <, antheræ dorsif., ovar. 3-5-locul. schizostyl., ovula 4-quina-plura; capsula loculicida, sem. solitar. (2), nucament., exalbum.; cotyl. crassæ carnoso-oleosæ, rad. brevi: — *Camellia, Thea.*

*Nota.* Generibus omnibus et dubiis rite comparatis, hæ familiæ 4 ad unam cogi possent, non obstante florum et semin. differentia.

FAM. 181. TILIACEÆ *nob.*

Arb. frut., raro hbæ, pube passim stellata, fol. altern., raro oppos., integr. v. lobatis, sæpe dentat. v. coriac.; stipul. 2 caducæ <. *Flor.* ☿ <, sæpius axillar., cymosi-thyrsoid.-solitarii, rarius calyculati, gynophoro et toro brev. v. obsoletis: sep. 4-5, (8)-+— connata, decid. et nov. valvata <;

petalâ alterna, lib. <, raro O v. plura, basi passim foveolata v. squamigera, nov. imbric. (v. contorta); stam. ∞, rarius dicycla, basi monadelpha v. c. parastemon., antheris norm. ellipsoid. basi-dorsifixis, rarius divaric. v. oblong. et acroporis. *Ovar.* lib., 2-10-locular. synstyl., brachypodum; ovula anatropa, axilia, ∞ v. pauca, pend. horiz. v. ascend.. *Capsula* loculi-septicida, v. indehisc. lignosa, drupacea, raro baccata v. unilocul.. Sem. ∞ v. solitaria, testa ⊣— dura, album. carnoso, embr. phyllolobo, recto, raro curvato, quibusd. alata, arillata v. exalbumin. — Spec. 406.

a. *Sarcolæneæ* s. *Chlænaceæ:* arb., rarius frut. scand. Madagascariæ <, fol. stipul. alt. < integerrim., sæpius glabris et nov. plicatis; flor. ⊣— conferti, quibusd. magni (= Camelliæ), singuli v. gemini calyculo 5-dentato, fimbriato v. bifido, demum incresc. v. baccante muniti: sep. 3, parva, imbric., petala 5 (6), nov. convolutiva; stam. ∞ v. 10, e toro cupulari, anther. norm. dorsif. ellipsoid.. *Ovar.* lib. synstyl. 3-locul., ovulis pend. gemin. <. Caps. 3-1-locul., loculicida; sem. passim solitar. et ovata, testa coriac.-rugosa; embr. albumini carnoso < æquilong., cotyl. foliac. cord. plicat. v. apice inflexis: — *Sarcolæna, Leptolæna, Schizolæna, Rhodolæna.... (?).*

b. *Tiliariæ* s. *Grewieæ:* arb. frut. (hbæ), fl. parvis v. magnis, petal. integris v. O, antheris normal.: — *Corchorus, Sparmannia, Entelea, Heliocarpus, Triumfetta, Grewia, Tilia, Apeiba, Lühea, Mollia, Muntingia; Sloanea, Ablania.....*

c. *Elæocarpeæ:* arbor. exot., passim excelsæ, amaro-arom. v. resinosæ, fol. integris, coriac. <, petal. fimbriat. v. lobatis <, antheræ acroporæ elongatæ <; drupa, capsula v. bacca: — *Elæocarpus, Monocera, Friesia; Tricuspidaria; Aristotelia....*

d. *Dipterocarpeæ:* arbores indicæ <, sæpe magnæ, resinosæ, v. camphoratæ <, fol. integerr.; sepala 5, nov.

valv. v. imbric., passim omnia v. 2-3 demum increscentia; pet. alt., nov. convolutiva; stam. ∞ v. subdefinita, brachynema, anther. norm. elongat., connexivo cuspidato; ovar. 3-locul., ovul. gemin. pend.. Fruct. 1-spermus, nucamentac. v. 3-valvis, induviatus calyce aucto, passim di-tripteromorpho; testa membr. albumen O, cotyled. magnæ, sæpe inæquales, crassæ v. contortuplicatæ, hypogeæ: — *Vateria*, *Vatica (Shorea)*, *Hoppea*, *Dipterocarpus*, *Dryobalanops*; — *Lophira?*

FAM. 182. MALVACEÆ *nob.*

Hbæ ann. frut. arbores, pube sæpius stellata obsitæ, foliis alternis <, integris, palmatis, pinnatilob. v. digitatis; stipulæ 2 lib., rarius caducæ v. O. *Flor.* monoclini, regular. axillar., cymoso-solitar. v. conferti, rarius diclini, irregular. v. oppositifolii: sepala 5 (4-3), ⊣— connata, sæpius durabilia, nov. valvata <, quibusd. in calycem subintegr. v. bilabiatum coalita, v. calyculo 3-∞-mero cincta; petala alterna, passim inæquilatera ac basi inter se et c. androeceo coalita, nov. convolutiva <, quibusd. O, inæqual. v. concava et appendiculata; stam. ∞, 1-5-adelpha, rarius monocycla et abortiva; antheræ unilocul. reniform. campyloschizæ, quibusd. anfractuosæ v. bilocul., extrors. v. introrsæ. *Ovaria* ∞-5 (2-1), gynophoro axili, magis sursum v. deorsum producto et tubo androecei incluso v. innato (Lavatera, Sterculia) v. obsoleto adfixa, lib. v. connata; styli lib. v. coaliti; ovula amphitropa v. hemianatr., rarius ana-v. atropa, axilia, solitar. v. conferta. — Utriculi, cocci, raro baccati, v. folliculi in syncarpium v. syncyclium digesti, aliis capsula 3-5-∞-2-1-follicularis, septi-loculicida v. indehisc. lignosa, drupac. baccata. Sem. pend. ascend. v. horiz., passim reniform., solitar. v. conferta, testa crust. < passim pulposa, pilifera v. strophiolata; albumen mucilag., carnos. v. O; embr. arcuatus <, cotyled. foliac. varie plicatis, rarius rectus et sarcolobus. Plantæ mucilaginosæ, quædam odore moschato, zibeth., stercoreo (animali) et sapore amaro, tannico v. acido insignes. Spec. 1550.

I. MALVARIÆ. Hbæ, frut., raro arbor., fol. stipulat. integerr. dentat.* v. palmatis; sepala 5 (4-3) durab. <, sæpe calyculo 3-∞-mero cincta; stam. ∞, monadelpha, anther. unilocul. campyloschiz. reniform.; ovaria ∞-5-3, ad gynophorum stylifer. ⊣— conspicuum verticillata v. congesta, lib. v. connata, ovulis amphitr. v. hemianatr. 1-∞; syncarpium utriculare, verticillat. < raro baccat. v. capsula 3-5-∞-follicular.; sem. pend. horiz. v. ascend., reniform., testa crust., sæpe aspera, pulposa v. pilifera, album. parcum, embr. arcuatus, pleco-phyllolobus.

a. *Malopeæ:* flor. sæpius calyculati; syncarpium utriculos. capitatum: — *Palava*, *Malope*, *Kitaibelia*.

b. *Malveæ:* fl. calyculati; carpella 5-∞, verticillata, lib. v. connata: — *Malva*, *Lavatera*, *Althæa*, *Urena*, *Pavonia*....

c. *Hibisceæ* s. *Ketmieæ:* fl. calyculati; carpella 3-5 (10), in capsulam loculicid. v. indehisc. coalita: — *Kosteletzkya*, *Hibiscus*, *Malvaviscus*, *Fugosia*, *Abelmoschus*, *Thespesia*, *Gossypium*.....

d. *Sideæ:* calyx nudus; carpella 5-∞, in capsulam loculicid. v. polycoccam coalita: — *Anoda*, *Cristaria*, *Sida*, *Gaya*, *Malachra*, *Abutilon*, *Bastardia*, *Lagunea*.....

II. HERMANNIARIÆ (s. BÜTTNERIACEÆ). Hbæ, frut. arbor. exot., fol. integr. dentat. v. palmati-pinnatilobis; *flores* passim minuti, glomerati, calyculati v. oppositifolii: sep. 5-4, ⊣— connata (Hugoniæ imbricata); petala alterna, plana, convolutiva v. abnormia (in Büttnerieis); stam. in cupulam (v. tubum) coalita, rarius libera, antepetalina, monocycla v. plura (10-40), passim parastemonib. antesepalinis solitar. (2-3) intercepta; antheræ bilocul. extrorsæ v. divaric., peri-poroschisæ v. normal.; *ovar.* 5-4-10-2-1-loculare, stylis lib. v. coalitis, ovulis anatrop. < gemin. v. plur. ascend., horiz., raro pendulis; *capsula* ⊣— crassa et dura, loculi-septicida, quibusd. indehisc., pulpifera, magna v. ad follicul. 1-sperm.

reducta; sem. solit. v. ∞, crassa v. compressa, quibusd. strophiol.; album. raro O; embr. rectus, phyllolob., arcuatus curvat., pleco-spirolob. v. amygdalin. — Plures Malvaceis simillimæ, sed Büttnerieæ passim anomalæ.

a. *Eriolæneæ*: arb. indicæ; flor. malvacei, calyculati; androec. tubulosum (Hibisci <), antheris ∞ bilocul., extrors. erectis, subimbricatis; ovar. 5-10-loc. synstyl.; capsula lign., loculicida, ∞-sperma: — *Eriolæna*, *Schillera* (*Wallichia* DC.).

b. *Dombeyeæ*: hbæ-arb., fl. malvac. 3-bracteatis <; stam. 10-40, basi monadelpha <, sæpius parastemon. elong. 5 intercepta; ovar. 5-10-locul., stylis lib. <; capsula loculi-v. septicida, album. raro O; cotyl. foliac. contortuplic., raro planæ v. bifidæ: — *Ruizia*, *Pentapetes*, *Assonia*, *Dombeya*, *Astrapæa*, *Trochetia*, *Pterospermum*. . . . *Hugonia*.

c. *Hermannieæ*: hbæ, frut., fl. malvac. nudis?; stam. 5, basi monadelpha, anther. extrors.; ovar. 1-plurilocul. caps. loculicida < oligo-polysperma (v. follic. 1-sp.), embr. rect. v. curv. c. albumine: — *Waltheria*, *Melochia*, *Riedlea*, *Hermannia*, *Mahernia*. . .

d. *Büttnerieæ*: hbæ arb. Nov. Holl. et Americ. (Asiæ), quæd. scand. et aculeatæ, flor. parvi: petala spathulata, concavo-fornicata, superne appendiculata et nov. valvatim induplicata v. simpl. minuta et O; stam. 1-cycla, lib. v. basi connata, passim c. parastemonib. v. androeceum cupulare, antheras antepetalinas solitarias v. bi-ternatim superpositas, extrorsas — et parastemones alternos 1-3 gerens; ovar. 3-5-loculare, ovulis binis-10, ascend.. Capsula loculi-v. septicida v. indehisc. pulpifera; semina sæpius strophiolata et albuminosa; embr. rect. phyllolobus, quibusd. pleco-spirolob. v. exalbumin.: — *Keraudrenia*, *Lasiopetalum*, *Thomasia*, *Seringia*. . .; *Ayenia*, *Büttneria*, *Rulingia*; — *Commersonia*, *Guazuma*, *Abroma*, *Theobroma*. . .

III. HELICTERARIÆ (s. Sterculiaceæ — nomen, odo-

rem paucis proprium indicans). Arb. frut. exoticæ, passim graveolentes, fol. integris, lobat. v. digitatis; fl. solitar. — thyrsoid., 1-2-sexual., sæpe irregul. v. apetali: calyx 5-merus, passim colorat., campanulat. dentat. v. bilabiat.; pet. 5, sæpe inæqual. et spathulata v. 0; androeceum monadelph., tubo brevi v. longo, lib. v. gynophoro aduato, limbo cupulari 5-∞ -fido, lobis antheras extrorsas fixas, subbiloculares, solitar. v. confertas (10-60) gerentibus. *Ovaria* 2-5, connata, sessil. v. gynophoro gracili, passim elongato et c. tubo androecei connato (gynandrophorum) suffulta, stylis sæpius connatis v. obsoletis, ovulis confertis v. solitar. ana-amphitr. v. atropis, ascend. horiz., raro pendulis. — Capsula 1-2-cocca v. 5-locular., drupa v. syncyclium folliculare; semina solitar. v. conferta, subglob. v. compressa, album. O v. carnoso (farin.?), embryo rect. v. curvat., cotyled. sæpe crassis, inæqual. v. rugosis.

a. *Helicterecæ:* fol. integr., raro lobatis, fl. ☿, calyx et corolla plerumque irregular., tubus androecei supra ovarium sessile productus v. gynophorum longum vaginans v. in gynandrophorum conferruminatus; capsula 1-2-cocca v. 5-locular. loculicida v. drupacea v. in folliculos 5, passim spiraliter convolutos, discedens: — *Plagianthus*, *Myrodia*, *Mutisia;* — *Methorium*, *Helicteres;* — *Ungeria*, *Reevesia*.

b. *Sterculieæ:* arb. fol. integr., palmat. v. digitatis, flor. 2-clini calyce regul. apetalo; gynandrophorum breve v. longum, cupula staminea v. ovario abortivis; ovula quibusd. atropa; syncyclium e nuculis notopterygiis v. folliculis 5 <, —+— duris, quibusd. sub anthesi apertis et pilis urentib. intus consitis; sem. solitar. v. conferta, exalbum.; cotyled. crassæ, quibusd. inæqual., lobato-rugosæ v. connatæ, rad. brevi, plumula diphylla: — *Heritiera*, *Sterculia* (genera plura?), *Pterygota*.

IV. ERIOTHECARIÆ (BOMBACEÆ): arbor. exot., quædam

aculeatæ v. graveolent., fol. integr., palmat. v. 3-9-dactyliis; flor. ☿ < sæpe magni, albi, rubri, flavesc., solitar. v. fascicul., calyce 2-3-5-lobo, integro v. irregul., petal. passim elongat. raro inæqu. v. O; androeceum monadelph., tubo brevi v. longo, 5-∞-fido et decomposito, antheris 5-10 v. permultis, lib. v. coadunatis, reniform., divaricat. v. linearib. et anfractuosis, subunilocular., horiz. v. verticalibus. *Ovar.* 5-(12-3)-loculare, synstylum, septis quandoque incomplet., ovulis ana-amphitrop., ⊣— confertis, horiz. v. ascend.. *Capsula* lignosa < 5-10-1-locul. poly-oligosperma, sæpe lana densa v. pulpa repleta, raro *drupa* 1-sperma alata; sem. subglob. v. oblonga, testa crust. nitida < raro strophiol., album. O v. parco; embryo rect. v. curvat., cotyled. planæ v. plicatæ, ⊣— crassæ, quibusd. inæqu. v. connatæ. (Adansonia-montiformis-vix non Hibiscus; Pachiræ grandifloræ androec. pedale et petala longissima).

a. *Ochromeæ:* fol. integr. v. palmatis: — *Cavanillesia (Pourretia)*, *Durio*, *Ochroma*, *Cheirostemon*, *Neesia*, *Montezuma*?..

b. *Adansoniæ*: fol. digitatis: — *Eriodendron*, *Eriotheca*, *Bombax*, *Chorisia*, *Pachira*, *Adansonia*..

FAM. 183. ERODIACEÆ nob. (Gruinales Endl.<).

Hbæ ann. passim irritabiles, tuberosæ v. bulbosæ, frutic. raro arbores, foliis passim stipulat. imis confertis, altern. v. opposit., integr., palmat., pinnatilob. et decompos.. *Flor.* ☿, sæpe irregular. axill., cymoso-solitar. v. conferti: sepala 5, 4-3, ⊣— connata, nov. imbric. rarius valvata; petala alterna, nov. convolutiva v. imbric. passim dsathulata et basi coalita, quibusd. perigyna, partim abortiva v. O; stam. 2-1-cycla, ⊣— basi v. superne connata, antepetalina sæpe tori lobulis stipata, breviora v. abortiva, — raro 3-cycla et 5-adelpha (hinc 5, 6, 7, 8, 10, 15), antheris normal. < dorsibasifix., oblong. v. didymis. *Ovaria* 5-3-2, ad axin. conna-

ta, antepetalina < gynophoro brevi v. columnari, stylis lib. v. connatis, intus stigmatosis, ovulis central., confertis v. solitar., ana-v. hemianatrop., < plerumque pendulis. *Capsula* 5-locul. < loculicida v. 1-5-cocca, raro baccata v. drupacea. Sem. solitar. v. conferta, testa crust. v. membr. tuberculat. <, album. carnoso v. O, embr. rect. v. curvat., cotyl. +— crass. passim plicatis. Spec. 1050?

A. ALBUMINOSÆ s. OXALIDEÆ. Hbæ frut. arbor., fol. estipul. altern., 2-∞ -dactyliis v. pinnatis (irritabil.) et simpl. *Flor.* regular. 5-meri, raro apetali, 10-andri <; ovaria 5 (3-2), connata < antepetal., ovulis pend. et anatrop. <; capsula loculicida < v. baccata; sem. solitar. v. conferta, album. carnoso, embr. recto v. curvato.

*Euoxalideæ* (et Bombaceis affines): hbæ acaul., passim bulb. v. tuberosæ v. frutices, foliis di-polydactyliis v. simpl., capsula 5-mera, loculicida, sem. tunicata, tuberculata: — *Oxalis.* (Spec. ∞).

2. *Carambole æ Rchb.*, frut. arbores, fol pinnatis, fructu sæpius baccato, sem. arillat. v. nuda: — *Biophytum; Averrhoa.*

3. *Ledocarpeæ:* frutic. Americ., fol. alt. v. oppos., trifidis, flor. calyculatis luteis, anther. basif., ovario 3-5 locul., synstylio crasso, 3-5-lobo, ovul. ∞ biseriat. campylohemianatr., capsula loculicida: — *Ledocarpum, Wendtia.*

4. *Vivianeæ:* hbæ v. fruticuli Americ., fol. oppos., v. 4-nis integris, serrat. v. lobatis, subtus albo-tomentosis, flor. cymosis, alb. rubr. v. cœrul., calyce 5-4-fido, nov. valvato, anther. dorsif.; ovaria 3, 2-5 connata <, styli intus stigmatosi, ovula 1-2-3, amphi-anatropa, pend. v. superiori erecto; capsula loculicida, 3-6-sperma v. 5-cocca, embr. curv. v. rectus: — *Cæsarea, Viviania; Cissabryon, Linostigma; Rhynchotheca?* (an Caryophyllaceis affiniores? in vivis scrutandum).

B. EXALBUMINOSÆ.

5. *Balsamineæ:* Hbæ sæpius annuæ, teneræ, raro frutesc., fol. estipul., imis v. caulinis, alt. v. opposit. et ternis, integr., serratis; flor. irregular. solitar. terni v. racemosi: sepala 5 (3), colorata, duo lateralia parva, nov. valv. v. anticis incumbentia, postico maximo, in calcar cavum producto, novello petala complectente; pet. alterna v. 3 (lateralibus c. posticis coalitis), antico maximo; stam. 5, alt., gynoecco æquilonga, synanthera, filam. cuneatis; *carpophylla* 5 connata, antepetalina, ovulis axilib. -+— confertis, 1-seriat., pendul. anatropis, stigmate sess. conico v. 5-lobo. *Capsula* carnosula, inferne 5-locular., elastice loculicida, kionidem seminiferam 5-angularem denudans, raro drupacea; sem. conferta v. solitaria, ovata, testa membr. tuberculata, embryone exalbum. amygdalino: — *Impatiens, (Balsamina), Hydrocera.*

6. *Tropæoleæ:* Hbæ succulentæ, glabræ, diffusæ v. volubiles, fol. primordial. opposit. bistipulatis, reliquis altern., estipul., peltatis <, -+— profunde lobatis; *flor.* irregular. axill. solitarii: calyx colorat. bilabiat. 5-fidus, nov. valv. v. imbric., labio infero 3-fido, basi in calcar cavum producto; pet. subperigyna, alterna, tribus posticis passim minor. v. deficientibus; stam. 8 hypogyna sæpius inæquilonga, antheris basif. norm. v. perischizis. *Ovar.* 3-2-locul., synstylum, ovulis solitar. pend. anatropis. *Fruct.* 3-2-1-coccus, passim baccat. v. samaroid.; testa cartilag. v. c. pericarpio confusa; embryo amygdalin. < passim synlobus: — *Chymocarpus, Tropæolum, Magallana.*

7. *Limnantheæ:* hbæ ann. succulentæ, glabræ, estipul. et ebract., fol. altern. pinnati- et bipinnatifidis: flores regular. axill. solitar. ochroleuci, pedunculis elongatis: sepala 3-5, basi connata, durabil., acuta, nov. valvata; pet. alt. subperigyna, marcesc.; stam. dicycla, antesepalina basi glandulosa, antheræ didymæ. Ovaria 5-3-2, antesepalina, stylo gynophoriano, apice 2-5-lobo, ovulis solitar. erect. anatropis.

Utriculi subcarnosi 5-2; testa membran., embryo amygdalinus: — *Floerkea, Limnanthes.*

8. *Geranieæ.* Hbæ, frutic. foliis bistipul. imis confertis v. altern. et oppos., palmatis, pinnatilob. v. integris. *Flor.* sæpe irregular.; pedunculi foliis alternis oppositi v. ex axilla alterutrius (minoris) oppositorum v. e dichotomia orti v. radicales, cymoso-1-2-∞-flori, umbellati, involucrati; sepala 5, ⊣— connata, nov. imbric., sæpe inæqualia et postico basi in tubulum (calcar), pedunculo adnatum producto; pet. alt., passim inæqualia, quandoque perigyna et antico v. plurib. deficientib.; stam. dicycla, basi monadelpha <, antepetalina breviora, passim omnia v. nonnulla abortiva et basi glandulosa, rarius 5-cycla et 5-adelpha; antheræ (5-7-10-15) norm. dorsif. oblongæ <. *Ovaria* 5, ad basin dilatatam gynophori columnaris 5-goni verticillato-adnata, biovulata, ovulis hemianatr., altero ascend. altero pendulo; styli 5 apicales sulcis gynophori inhærentes, supra gynophorum liberi et intus stigmatosi. *Cocci* 5 monospermi, maturi e. stylis a gynophoro elastice soluti, e calyce extracti et ope stylorum revolutor. v. tortilium e gynophoro penduli, tandem intus hiantes et decidui; sem. trigona, exalbum., testa crust., hilo subventrali; embryo conduplic., notorhizus, cotyl. foliac. flexuoso-convolutis: — *Erodium, Geranium, Monsonia, Pelargonium.*

## *Ordo IV. Meliastra.*

Gynoeceum sæpius endokionide præditum, 1-∞-loculare, rarius ovula parietalia. Flores plerumque monoclini et regulares, androeceum 1-3-adelph. plurimis; folia estipulata <.

### FAM. 184. CARYOPHYLLACEÆ.

Hbæ sæpe dichotomæ, rarius frutesc., foliis estipul. opposit., angust. v. latis, integris, integerrim. < uni-tri-plurinerviis. *Flor.* ☿ <, cymoso-conferti, raro solitarii: sepala 5-

4, ⊣— connata, durabil. < nov. imbric.; torus parvus, passim tenuis, gynophorum vaginans (adnatus?) v. in glandulas interpetalinas bilobas < discedens; petala alterna, passim bifida v. fimbriata et ungue marginato v. coronifero; stam. dicycla v. pauciora, antepetalina breviora, raro ananthera; antheræ norm. dorsifixæ. *Ovarium* sess. v. gynophoro sublatum, 2-5-phyllum, vix vel a basi ultra medium 2-5-septatum, styli 2-5, intus stigmatosi, fila conductoria ad placentam demittentes, ovula amphitropa ∞-1, funiculis basilaribus liberis, ⊣— longis, v. in placentam axilem coalitis inserta. *Capsula* unilocular., 1-∞-sperma, apice in valvas v. dentes simplici v. duplici stylorum numero dehiscens, quibusd. subbi-tri-quinquelocular., loculicida, v. pyxidium et bacca. Sem. reniform. lenticular., pyriform. v. carinata, testa lævi v. aspera, hilo subapicali, marginali v. ventrali, raro strophiolato, album. farinaceo v. subcarnoso; embryo curvat., annularis v. rectus, periphericus <. Spec. 1050. (Portulacaceas repetunt).

A. ALSINARIÆ. Flor. sæpe parvi v. apetali; sepala 4-5 (6-7), basi ⊣—, raro ad medium connata v. glumacea; torus obsolet. v. glanduloso-lobulatus, hypo-perigynus; stam. 2-1-cycla v. pauciora; ovar. eseptat., rarius 3-5-septatum; capsula simplici v. duplici stylorum numero in valvas v. dentes dehiscens; embr. arcuat. v. annularis:

1. *Alsineæ:* ovar., 1-locul., styli 2, 3, 4, 5, sepalis omnib. v. interioribus alterni, capsula rachicida, valvis integris, ante-v. intersepalinis, — pauciores sepalis interiorib. oppositæ: — *Sagina;* — *Buffonia*, *Queria*, *Alsine*, *Sabulina*, *Cherleria*, *Triplateia*, *Honkeneja*, *Lepyrodiclis*.

2. *Merckieæ:* ovar. ⊣— complete 3-5-loculare, caps. septi-v. loculicida, valvis integris: — *Merckia*, *Dolophragma*.

3. *Arenarieæ:* ovar. 1-locul., styli 2, 3 (4-5), sepalis oppositi; caps. globosa v. oblonga, raro conica, diploschiza (rachi-et marginicida): — *Thylacospermum; Arenaria*, *E-*

*remogone*, *Gouffeia*, *Möhringia*, *Kraschenninnikovia*, *Brachystemma*, *Odontostemma*, *Holosteum*, *Stellaria*.

4. *Cerastieæ:* ovar. 1-locul., styli 5 (4-3), sepalis alterni v. oppositi; caps. cylindr. v. subconica, diplodonta v. valvis 5 (4-6) bidentatis antesepalinis: — *Cerastium*; — *Malachium (Larbrea)*.

B. SILENARIÆ. Flor. hypogyni, passim majores et elegantes: calyx 5-fidus v. dentat., raro 6-merus; torus tenuis gynophoro adnatus <, stam. 2-4-cycla; ovarium gynophoro sublatum, rarius sessile, vix vel a basi ultra medium 2-5-loculare, 2-5-stylum; capsula dentibus 4-6-10 dehiscens, raro baccacea v. opercularis; embryo arcuat., annularis, spiralis v. rectus.

5. *Dianthеæ:* petala dextrorsum tortilia, rarius coronifera, calyx ecostatus < fruct. dimerus <, embryo circularis v. erectus: — *Acanthophyllum*, *Saponaria*, *Vaccaria*, *Gypsophila*, *(Heterochroa*, *Banffya? Dichoglottis)*, *Tunica*, *Dianthus*, *Velezia*.

6. *Lychnideæ:* petala varie tortilia, sæpius coronifera, calycis commissuræ costatæ, fruct. 3-5-merus, embryo circularis v. spiralis: — *Drypis*, *Uebelinia*, *Githago*, *Agrostemma (Coronaria* A. Braun), *Lychnis*, *Petrocoptis*, *Melandrium*, *Heliosperma*, *Silene*, *Viscaria*, *Cucubalus*.

*Nota.* Hæc nova Silenariar. divisio Al. Braun, an illi cl. Fenzl praeferenda? et subdividenda.

FAM. 185. LINACEÆ *nob.*

Hbæ ann. — frut. arbores, foliis alternis, rarius oppositis, sessil. et integerrim. <, passim carnosulis et minutis. *Flor.* ☿ <, regular., cymosi, racem. v. solitarii: sepala 5-4, basi connata, nov. imbric. quibusd. bracteis imbricatis aucta; petala alt., passim spathulata et marcescent., nov. convolutiva v. imbric., raro inflexo-valvata; stam. 1-2-3-∞ -cycla, sæpe basi mon-polyadelpha et parastemonib., glandulis v. toro dis-

coideo stipata, antheris norm. dorsif. ovatis v. oblongis. *Carpophylla* 5-4, 3-2-6, in ovarium septatum, semi-v. eseptatum coalita stylis lib., basi connat. v. O; spermophori crura gracilia (funiculi) axilia, connata v. libera, aut crassa excentrica, basilar. v. parietalia, ovulis anatrop. pend. v. erectis, solitar. v. confertis. *Capsula* septi-rachicida, raro monosperma et drupacea. Sem. solitar. v. conferta, ovata, glabra v. pilosa, comosa, caudata, album. O v. parco. — Spec. 145.

1. *Lineæ.* Hbæ ann. — frut., fol. alt. v. oppos., raro verticillat.; petala 4-5, nov. contorta, stam. alterna, passim parastemon. petalin. aucta, basi monadelpha; ovar. schizostylum, 5-4-3-locul., loculis biovulat. et septo dorsali —+— completo bilocellatis, ovulis pend.. *Capsula* glob., 6-8-10-loculata, septi- et rachicida; sem. ovata, compressa, testa coriac. nitida, tegmine carnoso, embr. fere amygdalino, exalbumin.: — *Cliococca, Radiola, Linum* (et subgenera Rchb.).

2. *Nitrarieæ.* Frut. ramis passim spinesc., foliis alt. crassiusc., sæpe fasciculat., integerr. v. apice tridentat.; flor. solitar. v. conferti, albi, fere perigyni: calyx 5-fid. parv., pet. 5, nov. inflexo-valvata; stam. 15, ovar. 3-6-locul., stigmata subsessil. papillæformia, ovula solitar. pend. e funiculis longis, *drupa* ovata, 1-sperma, apice 6-fida; embr. amygdal. exalbumin.: — *Nitraria.*

3. *Reaumurieæ.* Fruticuli divaric., glauci, glabri, fol. alt., sæpe confertis, carnosis, et endadenis; flores sess. solitar., calyce 5-fido, bracteis 3 v. plurib. imbricatis stipato (cymæ 1-floræ bract. abortivis confertis); pet. 5, sero decidua, inæquilatera, basi bisquamulata, nov. convolutiva; stam. 8-10-∞, passim 1-∞-adelpha; ovar. e carpophyllis 2-4-5, basi septantib. et oophori basilaris lobos 2-4-1-ovulatos amplectentibus; ovula erecta; *capsula* basi 2-5-loculata, 2-5-valvis, oligo-monosperma; sem. pilis ferrugineis arrectis dense obsita; embryo albumini farin. parco æquilongus, radic. exserta, inf.: — *Eichwaldia, Reaumuria, Hololachne.*

4. *Tamariceæ.* Suffrut. — arbores, fol. alt. sess. minutis, confertis, carnosulis, passim scrobiculatis et glaucis; flor. 4-5-meri, racemosi, albi v. rosei; stam. 4-10, passim basi coalita, bisquamulata v. toro 8-20-dentato stipata; ovar. 3-2-4-phyllum, eseptat., schizo-v. astylum; placentis, parietal. subulatis, ovul. ∞, erectis; *capsula* unilocul., sæpius trivalvis, polysperma; sem. comosa v. plumoso-caudata, exalbum., embr. amygdalin.: — *Myricaria, Trichaurus, Tamarix.*

FAM. 186. CLUSIACEÆ *nob.*

Hbæ ann. frut. arbores, passim resinosæ et organis plurib. articulatis, foliis estipulat (<?), integris, sess. v. brachypodis < opposit., rarius altern. verticillat. dentatis v. endadenis. *Flor.* ☿ <, regular. cymoso-solitarii v. conferti: sepala 5-4, 3-2-6-∞? (bracteæ) basi –1— connata; petala alterna v. plura, raro 0, sæpe inæquilatera, nov. convolutiva v. imbric.. Stamina polycycla et 3-5-adelpha, v. 2-1-cycla (hæc antesepalina), lib. passim toro lobato stipata; antheris normalib. v. polymorphis, brachynemis, extrorsis, aduatis. *Carpophylla* 2-5, plura, in ovarium septat. v. eseptatum coalita, stylis liberis v. synstylio peltato, kionide crassa, angulata, gracili v. 0; ovula solitar. v. conferta, anatropa, rarius atropa v. campylo-amphitropa, axilia v. parietal., horiz. ascend. v. pend. *Capsula* 1-3-5-∞-locular. septi-v. rachicida, quibusd. *lignosa, baccata* v. *drupacea,* 1-∞-sperma; sem. exalbum. teretia, recta, incurva v. ellipsoid., quibusd. compressa, alata v. arillata; embryo brachylobus v. amygdalinus <. Spec. 500?

I. HYPERICARIÆ. Hbæ, frut. arb., ramis sæpe 4-gonis, fol. oppos. (v. verticill.), rarius denticulat. v. endadenis; *flores* lutei (alb. v. rubri): sep. 5-4, passim inæqual.; petala subdurabil., quibusd. basi foveolata v. appendiculata; stam. ∞ v. 5-15, lib. v. 1-3-5-adelpha, quibusd. glandulæ v. squamulæ hypogynæ interpositæ; antheræ norm. sæpius didymæ et acradenæ; ovar. 3-5-plejophyll., stylis subliber. ca-

pitatis < septis ⊣— perfectis, 1-3-pluriloc.; ovula e spermophoris axilib. v. parietalibus, ∞ <, anatropa, horiz., rarius solitar. adsc. pend. v. amphitropa. *Capsula* 1-3-5-pluriloc., poly-oligosperma, sæpius septicida et spermophorum denudans, ⊣— dura, quibusd. baccat. v. drupac.. Sem. nuda v. tunicata, recta v. curvata, teret. v. compres., aspera v. lævia; embr. teres, radic. longiori <:

a. *Elatineæ:* hbæ annuæ (?), paludosæ, sæpe exiles et repentes (frutic.?), *stipulis* scarios. v. O?, flor. axill. solitar. v. glomerat. sessil. <, 3-5-meris; stam. 2-1-cycl. lib., ovar. 3-5-phyll., kionide crassa <; caps. septicida, ∞ -sperma, embr. teres, brachylobus: — *Elatine*, *Bergia*, *Merimea*; — *Ochranthe?*

b. *Parnassieæ* (anomalæ, undique jactatæ): hbæ acaules, perennes, glabræ, foliis imis longe petiolatis, cordat. renif. v. ovatis; cymæ radicalis pedunculis scapiformib. unifloris, monophyllis <; flor. albi v. flavesc. 5-meri: stam. fertilia 5, antesepalina crassiuscula, mobilia, anther. ovatis; parastemones adenomorphi, 5-adelphi, in phalanges petaloideas, 3-polytrichas, antepetalinas connati, raro solitarii; ovar. 4-3-phyllum, uniloculare, stigmata 4-3, subsessilia; ovula ∞, anatropa; capsula ∞ -sperma, 3-4-valvis; semina medivalvia tunicata, scobiformia, exalbum., embr. brachylobus: — *Parnassia.*

c. *Hypericeæ* Spach: Hbæ ann. — frutices, ramis continuis v. subarticulatis, foliis brachypod., sessil. v. amplexicaul, endadenis < passim serrulato-ciliatis, axillis sæpe clado-phyllophoris; sepala 5-4, endadena v. vittulata, passim inæqual. et biseriata; petala inæquilatera et nov. contorta <, efoveolata et esquamata, sæpe marcesc.; stam. (5-100) lib. v. breviter 1-3-5-adelpha, durabilia <; squamæ v. glandulæ hypogynæ O; ovar. 1-3-5-raro pluriloculare, quibusd. synstylum, spermophoris axil. v. suturalib.; capsula septicida < tricocca v. indeh.; sem. teret. subarcuata, aptera; embryo teres brachylobus: — Genera 17 Spachii: *Ascyrum*, *Brathys*, *Androsæmum*, *Hypericum*, *Drosanthe etc.*

d. *Vismieæ* nob. (Desmostemoneæ Spach.): hbæ perenn. frut. arbores, organis caulinariis plerumque articulatis, fol. sæpe endadenis, magnis et petiolatis, flor. raro bracteatis: sepala integerr. et petala striata, hæc æquilatera, ad basin sæpe foveolata v. squamigera et nov. non contorta; stam. 3-5-adelpha, durabilia <, filamenta phalangum connata ultra medium < et c. squamulis v. glandul. hypogynis alterna. — Capsula loculi-septicida v. tricocca, sæpe baccata v. lignosa, raro drupa; sem. teret., sæpe compres. v. alata; cotyledones radiculâ breviores, raro longiores v. latæ: — *Triadenia, Elodea; — Ancistrolobus, Tridesmis; — Vismia, Psorospermum, Haronga....*

II. CLUSIARIÆ. Arb. frut., quidam. parasit. v. scand. et succo flavo resinoso scatentes, ramis, petiol. et pedunculis articulat. et oppositis, foliis integerrim., passim coriac. nitidis et costulatis, raro endadenis. *Flor.* 1-2-clini (abortu), regular. albi, rubent. (flavi): sep. 2-4-5-6-plura, decussata v. imbric., externa minora v. bracteolata; petala alterna v. plura, nov. tortilia; torus hypogyn. carnosus, raro lobatus. Stam. ∞ <, lib. v. mon-polyadelpha, polymorpha, filam. gracil. v. crassis, antheris norm. v. extrorsis, unilocul., perischiz., acroporis, sæpe linear., adnatis v. sessilibus. *Ovar.* 1-2-5-∞-loculare, stylo brevi crasso v. peltato-lobato, ovulis solitar., binis v. plur., anatrop., horiz. v. adsc., raro atropis. *Capsula* valvatim dehisc et placentam seminiferam denudans, v. indehisc. *baccata, drupacea,* 1-∞-locularis; semina solitar. v. conferta, sæpe arillata; cotyled. crassæ, passim inæqual. v. conferruminatæ, radic. brevissima:

a. *Calophylleæ:* ovar. bilocul., ovulis gemin., v. unilocul. ovulis 1-3; caps. v. drupa 1-4-sperma: *Calophyllum, Mesua..*

b. *Garcinieæ:* ovar. ∞-locul., ovulis solitariis; drupa v. bacca: — *Hebradendron, Stalagmites, Garcinia, Mammea...*

c. *Moronobeæ:* bacca indehisc., loculis plurib. plejospermis: — *Moronobea, Chrysopia.*

d. *Clusieæ:* loculi ovarii plures, uni-pluriovulati; cap-

sula valvata, placentam angulatam denudans: — *Arrudea*, *Clusia*, *Rengifa*, *Havetia*, *Tovomita*...,

III. MARCGRAVIARIÆ. Arb. frut. Amer. trop., quæd. scand. et caulorhizæ, foliis altern., integr. v. subserratis *Flor.* ☿ cym.-umbellati v. racem.; pedunculi basi articul. sæpe bracteis elongatis, sursum obverse saccatis, et bracteolis calycinis stipati; sep. 2-5-6, lib. v. basi coalita, decid., nov. imbric.; pet. subcoriac., lib. v. basi coalita, nov. imbric. — v. in calyptram apice perviam connata; stam. ∞, raro 1-cycla, antesepal., lib. v. in annulum hypogynum s. torum basi connata, anther. norm. dorsif., ovat. v. oblongis. *Ovar.* 3-5-∞-loculare, kionidis crassæ angulis ∞-ovulatis; ovula adsc. anatropa?, synstylium breve solid. v. radiatum. *Bacca* v. *capsula* loculicida, kionidem denudans; semina pauca, kionidi immersa, oblonga, recta v. incurva, testa duriuscula areolata; embryo clavato-incurvus, brachylobus: — *Ruyschia*, *Norantea*, *Marcgravia*.

IV. BREXIARIÆ. Arb. frut. Madagasc. et N. Zeeland., fol. alt. v. oppos. et verticill.?, oblong. brachypod., coriac. serratis <. *Flores* cymoso-umbellati, perigon. utroque 5-mero, nov. imbricato: calyx persist. v. decid.; petala oblongo-elliptica, coriac.; torus hygogyn. adnat., lobis 5 antepetalinis; stam. 5 antesepal. normal., antheris subdorsif.. *Ovar.* 3-5-locul., ovulis plurib. biseriat. v. geminis pend., synstylio 5-lobo v. pyramidali. *Drupa* v. *capsula* loculi- et stylicida, poly-oligosperma; sem. glabra, strophiolata? exalbum.? embr. sarcoob, radic. brevi: — *Ixerba*, *Brexia*.

FAM. 187. MELIACEÆ.

Arbor. v. frut. exotic. <, oleo æthereo et resina -+— dives, organis plurib. basi articulatis, foliis altern. (raro oppos.), pinnatis, bipinnat., pinnatilob. v. integris, endadenis et coriac. <. *Flores* ☿ (raro diclini) regular., axill. v. term., cymoso-solitar., racem. v. thyrsoid., albi, rubent. v. flavi, perigon. utroque nov. imbricato, raro corolla valvata v. convolutiva; sepala 5-4-3, -+— v. omnino connata; pet. carnosu-

la, alterna, sæpe basi inter se et c. filam. connata; stamina di-plejo-monocycla (hæc antesepal.), lib. v. in urceolum (tubum) dentat. v. lobat. connata, 1-5-adelpha, antheris norm. et dorsifixis <. *Ovarium* synstylum, sess. v. gynophoro brevi et toro vaginante, discoid. v. cupulari præditum, 1-∞-loculare, loculis primitus apice sæpe perviis, kionide —+— crassa, 5-5-gona, ovulis solitar.-12, plurib. axilib., pend. horiz. v. ascend., anatropis, raro amphi-v. atropis. *Capsula* loculicida v. *bacca* et *drupa* 1-5-plurilocularis; sem. solitar. v. conferta, quibusd. alata v. arillata, album. carnoso, sæpius O; embryo amygdalin., rarius phyllolob. et rad. longiori. Spec. 290?

I. HUMIRIARIÆ. Americanæ, balsamiferæ, fol. integris flor. cymoso-corymb., 5-meris: stam. di-polycycla, basi 1-5-adelpha, antheræ connexivi processu crasso superatæ. *Ovar.* toro cupulari dentato cinctum, loculis in novello apice perviis (= Melieis) v. et transverse septulatis, ovulis pend. solitar. v. geminatis. *Drupa* oligosarca, 4-5-1-locul., sem. solitar., embryo albumini carnoso æquilongus, teres, brachylobus: — *Saccoglottis*, *Humirium*, *Helleria*.

II. MELIARIÆ. Folia integra, pinnatiloba, pinnata et bipinnata; flor. 1-2-clini, cymoso-racem. v. thyrsoidei, 4-5-meri; petala nov. valvata v. imbric., quibusd. basi inter se et c. androeceo connata; androeceum symmerum, antheris inter dentes urceoli v. tubi adfixis, inclus. v. exsertis. *Ovar.* 4-5-2-∞-locul., synstylio globosa, pyramid. v. lobata; ovula 2-1-4 in loculis, ana-amphi-v. atropa. *Capsula* loculicida, passim *baccata* v. *drupac.*; sem. aptera erecta, inversa v. horiz., sæpius solitar. et arillata; embr. phyllolob. radic. exserta et albumine carnoso — v. amygdalin. exalbuminosus.

a. *Melieæ* — albuminosæ: — *Canella* (?), *Quivisia*, *Calodryum*, *Turræa*, *Melia*, *Azadirachta*.... *Lecа?*.

b. *Trichilieæ* — exalbuminosæ: — *Aglaia*, *Lansium*, *Dysoxylon*, *Hartighsea*, *Sandoricum*, *Ekebergia*, *Heynea*, *Trichilia*, *Moschoxylum*, *Guarea*, *Carapa*, *Xylocarpus*.....

III. CEDRELARIÆ. Arbores tropicæ <, sæpe maximæ,

ligno denso, odorato, rubro v. flavesc., foliis pinnatis, flor. polygam, racem. v. thyrsoid., 4-5-meris: pet. nov. contorta v. convolutiva; stam. 2-1-cycla, e toro, lib. v. synnema, inclusa. *Ovar.* loculis 5, 4, 3, 4-∞ -ovulatis; ovula ad angulos kionidis biseriata, adsc. v. pendula, anatropa. *Capsula* lignosa, septifrage 3-5-valvis, kionidem crassam 3-5-gonam v. alatam denudans.; sem. compres., exarill., testa subfungosa, basi, apice v. undique alata, hilo basilari v. laterali, album. parco v. 0, embr. phyllo-v. sarcolobo, brachyrhizo: — *Swietenia*, *Khaya*, *Soymida*, *Chickrassia*; — *Chloroxylon*, *Flindersia*, *Oxleya*, *Cedrela*..

IV. LIMONIARIÆ s. AURANTIACEÆ. Arb. frut. Asiæ <, fol. pinnat. pluri-unijugis v. monodactyliis, sæpius glabris, endadenis et axillis spinigeris; *flor.* cymoso-solitar. corymb. v. racem.: calyx brevis, 5-3-fid. v. vix dentatus; pet. quandoque basi cohærent.; stam. di-plejocycla < (5-60), lib. v. 1-∞ -adelpha, *ovar.* 2-5-15-locul., synstylio basi articulato <, ovul., axilib., solitar. binis v. plurib. biseriat., pend. (v. horiz.), anatropis <. *Bacca* corticata, —— succulenta, 1-2-15-locular., loculis 1-∞ -spermis, testa passim mucosa v. lanata; embr. exalbum. amygdalinus, cotyled. passim auriculatæ, inæqual. v. rugosæ.

a. *Limonieæ nob.*: frut., rarius arbores v. scand., fol. simpl. v. compositis, flor. passim minutis, 5-3-meris, stam. 5-10, ovar. 2-5-locul., ovul. solitar. v. binis collater. v. superpos., bacca sæpe 1-sperma et exsucca: — *Atalantia*, *Triphasia*, *Limonia*, *Glycosmis*, *Bergera*.... *Murraya*, *Cookia*, *Clausena*.... *Amyris*?

b. *Citreæ*: arbores <, fol. 1-3-jugis v. mono-dactyliis; stam. 2-∞ -cycla, ovar. 5-15-locul., ovul. 4-plurib. biseriatis; bacca corticata (magna) 5-15-locul., poly-oligosperma: — *Feronia*, *Aegle*, *Citrus*.

## REGNUM AMPHORCANICUM.

(Zoophyta nob.).

Corpora organica plurima, in aqua marina v. dulci oriunda v. e solo humido pronata, adeo qualitates animalium et plantar. perfectiorum, imo mineralium, chemicas v. physicas in se jungunt, ut commode in regnum intermedium, facilius limitandum, cogi possent. Regni hujus membra simplicissima (Fungi et Algæ microscop.) nonnisi ovula animalium v. sporas et pollinia plantar. sistunt; in magis compositis thallus polymorphus et conceptacula varia effigurantur, quæ tamen omnia antheræ c. ejus connexivo, sporangio aut flori plantarum v. ovario animalium, utero ejusque ligamentis ac tubis Fallop. æquiparari possunt, licet Sargassa aliæque algæ caulem plantar. foliatum, e contra Eleutheriæ et Medusæ oculatæ? ac polypi Flustrinorum animalia examussim simulent. Quid mirum, si oculus, præ cæteris organis sensuum peculiaribus animalia ornans, et in hujus Regni intermedii membris paucis enigmaticus v. perfectus appareat — ac uterus cum vagina et tuba Fallop. in tubum cibarium pervium Bryozoorum, variis diverticulis provisum et coronatum efformetur?

Amphorganica igitur nonnisi organis reproductivis excellunt ac omnes propagationis modos sibi vindicant: Polypi ovivivipari, sed sæpius per gemmas, stolones et divisionem multiplicandi. Generatio æquivoca hoc in regno quoque frequentissima. *Spermocystæ* (antheridia, vesiculæ seminales) in Fungis? Algis, Polypariis et Acalephis obviæ nullum analogon (?) in plantis polliniferis agnoscunt, sed in Sporophoris pluribus, Amphorganica præformantibus, observantur. Sporæ Algar. et Fungor. plurium, ovulis animalium, vesicula embryonali saltem destitutis, simillimæ, nobis *ovula* conformitatis gratia audiunt.

Classes 4 hujus Regni: Fungi, Algæ, Polyparii et Acalephæ, per membra amphotera naturaliter junguntur: Fungis et Algis *Leptomitei*, Algis et Polypariis *Spongiæ etc. Trichophyta* intercedunt, Polyparii quidam ex Acalephis et Acalephæ e polypis oriundæ, summam affinitatem et horum demonstrant. Polypi plicati Anthozoorum plurium nonnisi pileo Agarici resupinato comparandi, stipite (cavo) in cloacam exsertilem et radiculis in tentacula evolvendis. Mollusca tunicata an Bryozois affiniora sint, decidere adinterim nequimus, quum natura eorum nobis nondum perfecte innotuit.

Physiographi studio speciali corporum, quæ ad Amph. organica retulimus, magis addicti, vix non omnes de natura eorum vegeto-animali disseruêre, at studium hoc a plurimis neglectum, historia evolutionis in paucis cognita et generum adumbratio vaga tot obstacula sistunt ad justam corporum amphorganicor. coordinationem; hinc et nostra nonnisi provisoria erit et novo egebit examine.

## Classis I. Fungi.

Corpora amphorganica (Zoophyta aërea) summe heteromorpha, coloris omnivarii, adinstar animalium aërem alterantia et azotata, amylo et chlorophyllo privata, organa omnia utplurimum simul evolventia, et putrida odorem tetrum spargentia, more plantarum ope radicis spuriæ (mycelium) v. veræ solo adfixa et torpida, sed quædam sponte aut levissime irritata organa prolifica subito explodentia. Nascuntur e humo v. variis corporibus organicis, vivis v. mortuis, v. intra parenchyma organicum e cytoblastemate v. gelina stagnante, generatione æquivoca v. e conidiis? ac ovulis externis v. ascis inclusis. — Ovula (sporæ) e granulis gelinæ v. cytoblastematis, e cellulis terminalib. v. filialibus, e basidiis v. intra ascos oriunda, sistunt vesiculas globosas v. elongatas, cytoblastemate granuloso plenas v. nucleum compactiorem et

guttulas (vesiculas?) oleosas solitarias v. plures foventes, hibernantes? et fausto tempore mycelium ac fungos evolventes. Vesicula embryonalis quibusdam inesse videtur? et analogia evidens cum sporis et polliniis, nec non mobilitas spontanea in quibusdam observata.

Fungi constant e cellulis microscopicis solitariis oomorphis (ovulis) v. et fulcrantibus variis, quæ in mycelium, hyphas. capillitium v. cytema sæpe plocenchymaticum et cito increscens, laxum, muco (cambio?) abundans, in quibusdam ab aëre mox cœrulescens, — v. strictum, lignosum, peracta fructificatione unica periens, raro perenne et innovandum (Polyporus), latice passim viroso v. lacte acerrimo v. innocuo prægnans et receptacula varia ovulifera formans evolvuntur; hinc organisationis modus et progressus sequentes:

Mycelium primordiale, ex ovulis v. immediate e succo organico ortum, floccosum, arachnoideum, membranaceum, v. maculam, mucilaginem, spumam, caseum, spongiam aut tuber compactius referens, —+— effusum, superficiale v. inconspicuum, terram v. cytema organicum penetrans, v. obsoletum, fugax v. perennans, sterile, conidiophorum v. stoloniferum (Mucor), — in *Coniomycetis* ovula varia intra v. extra cellulas plantarum v. matricem ovuligeram e cambio spissato et extravasato ortam?, in *Hyphomycetis* hyphas (flocci) simplices v. ramosas, ovuligeras, erectas rarius prostratas, evolvit — aut tubercula progenerat, demum in peridium simpl. v. multiplex, passim columelligerum et ovulis variæ originis, sæpe capillitio stipatis, quibusdam peridiolis v. asceis inclusis farctum evolvenda (Gasteromyci). Tubercula mycelii Hymenomycetum, denique increscentia, thallum (receptaculum, stroma, hymenophorum) velo universali et passim duplici, durabili, in volvam et annulum v. cortinam efformando, fugaci v. vix ullo præditum, evolvunt; superficies thalli polymorphi omnis v. ex parte strato ovuligero s. *hymenio* obducitur; ovula numerosa quaterna, rarius 1-sena,

exserta, basidiis et mucronibus (sterigmata) suffulta v. ascis inclusa et paraphysibus ac antheridiis (?) stipata.

Chemia in Fungis funginam azoteam peculiarem (cellulosa adiposa? Payen), osmazomum et alteram materiem animalem, alcohole insolubilem, albuminam, oleum pingue, adipoceram, huminum, carbonat. ammoniæ, principium fragrans, olidum et veneficum, saccharum, resinam, acida fungicum, aceticum, benzoicum, phosphoric. muriatic. et sulphuricum, plerumque potassæ, sodæ et calci nupta invenit.

Celeberr. Léveillé Fungos (et Sclerogasteres) in ordinibus 6 et familiis 75? ita disposuit:

1. *Basidiospori* Agaricus, Clavaria, Tremella, Phallus et affin. ac Gasteromycetes plurimi.

2. *Thecaspori:* Helvellini, Hysteriei, Sphæriacei et Tuberacei.

3. *Clinospori* — clinodium (thallus) fila monospora gerens, e. g. Tubecularieæ, Stilbum, Aecidium, Uredo, Labrella, Sphæropsis.

4. *Cystospori* = Mucorinis *nob.* et Eurotium.

5. *Trichospori* = Hyphomycetis, sporis non concatenatis.

6. *Arthrospori* — sporis concatenatis, e. g. Antennaria, Phragmotrichei, Helicosporei, Aspergillei, Sporodini, Torulacei etc.

Iam vero sporarum evolutio in fungis plurimis ignota novum systema adaptare vix sinit — et Sclerogasteres Lichenibus affiniores sunt; hinc more solemni Fungos reliquos in ordinibus 4 disponimus, Corda *Icones fungorum* præprimis consulentes. Familiæ 20 an plures? Genera multa, denuo examinanda, species innumeræ.

## *Ordo I. Coniomycetes*

(Clinospori et Arthrospori Lév. e parte).

Ovula globosa, pyriformia, clavata, rhombea, polyëdrica, cylindrica, fusiformia, recta v. curvata, annularia, lævia v.

exasperata, simplicia v. loculosa et septata (an sporangia?), primitus v. dein discreta, sessilia v. pedicellata, in catenulas, stellulas, fâssiculos conjuncta, membrana duplici et poris 3? prædita ac massa granulosa et guttulis oleosis farcta (an omnia?), matura pulverem varii coloris (flavi, rubri, negrescentis) sistunt. Oriuntur in parenchymate omnium partium plantarum, præcipue e succo intra-v. extracellulari (cambio alterato) et reclusa in meatubus intercellularib. (Protomyces), in cavis respiratoriis, stomatiis manent v. magis accumulata et maturescentia, epidermidem sublevando, pustulam formant, area pallida circumdatam, tandem rumpendam (peridium spurium). Plurimis matrix (stroma spurium, clinodium?) e succo granuloso formata — v. mycelium floccosum, parenchyma plantarum penetrans, subest. Vid. *Memoire sur les Ustilaginées comparées aux Urédinées par MM. Tulasne, in Ann. d. sc. natur.* 1847. *Ianvier.*

FAM. 1. CÆOMINI (Cæomaceæ Corda).

Matrix gelatinosa, floccosa, grumosa v. obsoleta, cum ovulis simplicibus, epi-v. entophytis: *Protomyces*, *Physoderma*, *Cœoma*, *Uredo*, *Ustilago*, *Sepedonium*, *Asterophora*, *Echinobotryum*, *Fusidium*, *Gymnosporium*, *Illosporium*, *Conisporium*, *Coniothecium*, *Myxosporium*. . . . .

FAM. 2 PHRAGMIDINI.

Matrix v. mycelium similia, cum ovulis loculosis v. septatis: — *Dicoccum*, *Stilbospora*, *Didymosporium*, *Fusoma*, *Puccinia*, *Sporidesmium*, *Hymenopodium*, *Dictyosporium*, *Phragmidium*, *Triphragmium*, *Asterosporium*.....

FAM. 3. TORULINI.

Ovula simplicia, contatenata (tandem discreta?), e succo organico, passim in matricem v. mycelium efformato, oriunda (Leptomiteis affines?): — *Siridium*, *Torula*, *(Chalara*, *Antennaria)*, *Speira*, *Gyrocerus*, *Helicomyces*.

FAM. 4. SEPTONEMINI.

Ovula loculosa v. septata, concatenata, similis originis: — *Bispora*, *Septonema*, *Trimmatostroma*, *Alternaria*.

## *Ordo II. Hyphomycetes*

(Trichospori et Arthrospori Lév. e p.).

Mycelium (hyphasma, thallus, hypothallus, flocci repentes sterilès *auctorr.*) floccosum, byssinum, membranac., crustaceum v. rhizomorphum, —+— conspicuum et effusum, sterile, conidiophorum v. hyphas (flocci fertiles, fila, rhabdi, fibræ *auctorr.*), e cellula unica, elongata v. pluribus, in catenulas discretas v. conferruminatas conjunctis, constantes evolvit, quæ tunc simplices, pellucidæ, stipitiformes, opacæ et ramosæ v. basi-apice incrassatæ (bulbosæ, capitatæ), discretæ v. in areas maculæformes, cæspites, fasciculos congestæ v. conglutinatæ esse solent. *Ovula* polymorpha, ut in Coniomycetis, hyphis laxe inhærentia, inspersa, sessilia v. pedicellata, e cellulis earum secedentibus orta, solitaria v. glomerata et conglutinata aut in catenulas sparsas, verticillatas v. penicillatas congesta. Ovula germinantia e verruculis fila mycelii agunt (adinstar polliniorum), e quibus hyphæ et ovula, vario colore tincta, exsurgunt.

FAM. 5. SPOROTRICHINI.

Hyphæ repentes, ovulis simplicibus, inspersis v. pedicellatis.

a. *Sporotrichei:* ovulis inspersis: — *Ramularia, Tuburcinia, Acrothamnium, Capillaria, Sporotrichum, Fusisporium, Circinotrichum, Myxonema, Colletosporium, Memnonium.* . . . .

b. *Acremonii:* ovula solitaria v. conglomerata e pedicellis solitariis, dichotomis v. verticillatis: — *Monotospora, Coccotrichum, Zygodesmus, Acremonium, Myxotrichum, Gonatotrichum.* . . . .

FAM. 6. STILBINI.

Hyphæ erectæ, simplices, ramosæ v. in stipitem coalitæ, ovulis simplicibus:

a. *Psilonii:* hyphæ simpl. v. ramosæ, ovulis undique inspersis: — *Psilonia, Colletotrichum, Chloridium, Camp-*

*toum, Gonatosporium, Botrytis, Chætopsis, Campsotrichum, Menispora, Oedemium, Rhinotrichium, Trichostroma, Medusula* . . . .

b. *Ceratocladiei:* hyphæ elongatæ (circinatæ) steriles v. in stipitem connatæ, cum pediculis ovuligeris confertis, peripheriels v. basilaribus: — *Tricholeconium, Gyrothrix, Ceratocladium; — Ceratium, Isaria, Byssocaulon* . . . .

c. *Polyactidei:* hyphæ byssinæ, læte coloratæ, ramosæ — ovulis perfectioribus, in capitula terminalia (et ramorum) congestis: — *Polyactis, Cladobotryum, Stachylidium, Gonatobotrys, Sceptromyces, Verticillium, Peronspora, Acrostalagmus, Gliocladium, Acmosporium, Corethropis* . . . .

d. *Stilbei:* stipes floccosus, fibrosus v. corneus, capitulo ovulorum terminali: — *Hyalopus, Haplotrichum, Sporocybe, Cephalotrichum, Periconia, Doratomyces, Cephalosporium, Stilbum, Graphium, Ciliciopodium* . . . .

FAM. 7. SPORODINI.

Hyphæ erectæ, ovulis simplicibus concatenatis.

a. *Sporodei* catenulis pleurogenis: *Sporodum, Spondylocladium, Gonatorrhodum.*

b. *Aspergillei:* catenulis acrogenis e capitulo v. ramulis hyphæ: — *Penicillium, Aspergillus, Stysanus, Coremium* . . .

FAM. 8. TRICHÆGINI *nob.*

Hyphæ repentes v. erectæ, ovulis loculosis v. septatis (compositis, an ultriculis multiovulatis?):

a. *Bactridiei:* hyphæ repentes, ovulis inspersis: — *Trichothecium, Epochnium, Helicotrichum, Myxocladium, Bactridium, Soredospora* . . .

b. *Trichægei:* hyphæ erectæ ovulis inspersis: — *Blastotrichum, Cladosporium, Helminthosporium, Polythrincium, Diplosporium, Mystrosporium, Stemphylium, Septosporium, Trichægum, Amphitrichum, Triposporium, Helicosporium, Cladotrichum* . . . .

c. *Arthrobotrydei:* hyphæ erectæ, ramosæ v. no-

dosæ, ovulis perfectioribus, acro-v. pleurogenis: — *Cephalothecium, Brachycladium, Stachybotrys, Arthrobotrys.*

d. *Dendryphiei:* ovula composita et concatenata, acrogena e capitulo v. ramulis hyphæ erectæ: — *Dendryphium, Dactylium.*

## *Ordo III. Gasteromycetes.*

Fungi geo-phyto-zoogeni, microscopici v. maximi (diametri 3-pedalis), e mycelio floccoso, fibrilloso, farinaceo, —+— durabili, v. e mucilagine primaria, in mycelium v. fungum ipsum effiguranda (Myxogasteres) pronati, — peridio globoso v. elongato, serpente, flexuoso, lobato etc., —+— discreto, hyalino, floccoso, crustaceo v. crasso, lignoso, simpl. v. duplici, quibusdam velato v. calyptrato, sessili v. stipitato, radicato v. floccis mycelii suffulto, primitus clauso < et pulposo, dein dehiscente v. fatiscente, intus celluloso, carnoso v. cavo et columellam v. cyathodium (Cribraria, Clathrus), ovula et capillitium aut peridiola 1-∞, ovuligera fovens. Ovula globosa, angulata, lævia v. muriculata, simplicia <, basidiogena (tetradæ Phöbus) v. intra cellulas et ascos orta.

A. Ovula e granulis cytoblastematis oriunda?:

FAM. 9. AEGERITINI *nob.*

Peridia minuta spuria, elongata, cæspitosa, microscopica, massa granulosa farcta, — v. perfectiora, globosa — elongata, ovulis conglobatis (raro ascogenis), absque columella et capillitio:

a. *Byssei:* pseudoperidia filiformia, cæspitulosa, ramosa <, massa granulosa (sporidiis ?) farcta (an mycelia torpida?): — *Byssus, Dematium, Ozonium, Rhizomorpha?*

b. *Erineei:* pseudoperidia epi-entophylla, filiformia, flexilia, intricata, passim septata, ramosa, lobata, capitata v. compressa (an cellulæ, epidermis et pili degenerati?): — *Chætosporium, Erineum, Phyllerium, Septotrichum..*

c. *Aegeritei:* peridia elongata v. subglobosa, passim

cæspitosa, —+— durabilia, ovulis conglobatis, mycelio floccoso v. crustaceo persistente <: — *Onygena? Tubulina, Licea, Perichæna, Asterothecium, Dichosporium, Aegerita, Myriococcum, Eurotium.... Racodium?*

d. *Aecidiei:* peridia entophyta, dein erumpentia et aperta, quibusdam elongata, ovulorum passim concatenatorum pedicellis conferruminatis, mycelio conspicuo: — *Aecidium, Cronartium, Röstelia, Peridermium, Graphiola.*

e? *Erysiphei:* peridia globosa membranacea, ruptilia, epiphyta, mycelio filamentoso largo suffulta, ovulis conglobatis v. ascis 4-8 ovuligeris plena: — *Antennaria, Lasiobotrys, Pleuropyxis, Erysiphe..*

FAM. 10. MUCORINI (Cystospori Léveil.).

Peridia minuta, subdiaphana, stipitata, e cellula terminali formata, quibusdam columellata, ovulis simpl. absque capillitio; mycelium —+— durabile:

a. *Crateromycetei:* peridium cupulare semper apertum: — *Calyssosporium, Hemiscyphe, Crateromyces, Didymocrater.*

b. *Mucorei:* perid. primitus clausum: — *Hydrophora, Mucor, Rhizopus, Ascophora, Helicostylum, Aërophyton, Sporodinia, Syzygites....*

c. *Diamphorei:* perid. operculatum: — *Diamphora.*

d. *Pilobolei:* stipes crassior et peridium maturum v. operculum elastice desiliens: — *Pilobolus, Pycnopodium, Chordostylum, Caulogaster.*

B. Fungi myxogeni. Ovula intra cellulas matricales cambii orta (endogena), his solutis cambium in capillitium varium figuratur.

FAM. 11. PHYSARINI *nob.*

Myxogasteres minuti; peridium simplex, raro duplex, quibusdam columellatum; ovula endogena, capillitio firmiori inspersa:

a. *Physarei:* peridium persistens, externo, si adest, fatiscente; capillitium floccosum, vagum, peridio v. columellæ adnatum: — *Myrosporium*, *Lignydium*, *Angioridium*, *Physarum*, *Tripotrichia*, *Leocarpus*, *Didymium*, *Diderma*, *Leangium*; — *Craterium*, *Stegasma*; — *Cirrholus*. ...

b. *Trichiei:* perid. persistens, ecolumellatum; capillitii flocci intricati, spiriferi: — *Trichia.*

c. *Cribrariei:* perid. fatiscens; capillitium reticulatum e cyathodio basilari: — *Arcyria*, *Cribraria*, *Dictydium.*

d. *Stemoniteï:* perid. fatiscens; capillitium reticulatum e columella setacea, stipiti continua: — *Stemonitis*, *Diachea.*

FAM. 12. RETICULARINI.

Myxogasteres majores <; peridium simpl. v. duplex, floccosum, membranac. v. durum, fatiscens, sessile, raro columellatum. Ovula endogena; capillitium lamellosum, reticulatum v. furcato-ramosum.

a. *Aethalieï:* peridium tenue, fugax, capillitio peripherico lamelloso: — *Spumaria*, *Aethalium*, *Ptychogaster.*

b. *Reticulariei:* peridium tenue, fragile v. calcareum; capillitium reticulat. v. furcato-ramosum: — *Reticularia*, *Xyloidion*, *Diphterium*, *Enteridium*, *Lycogala?*

C. Ovula basidiogena.

FAM. 13. POLYSACCINIs. ANGIOGASTERES *nob.*

Fungi minuti v. magni, partim hypogei. Peridium simpl. v. duplex et velatum, fovens peridiola 1-∞, ovulis basidiogenis et capillitio floccoso v. firmo plena. Tribus an familiæ 4.

a. *Carpoboli:* peridium simplex, velat. v. duplex, minutum, dein ruptum et urceolatum (interno, si adest, reverso) protrudens peridiolum solitarium ovuligerum: — *Atractobolus*, *Thelebolus*, *Sphærobolus.*

b. *Geastrei:* primitus hypogei; peridium externum dein stellato-fissum v. cupulare et coriaceum, internum innatum v. separabile et dein reversum; peridiolum solitar. ostiolatum, sess. v. brachypodum (Myriostomati polypod. et

polystomum), capillitio firmo: — *Geaster*, *Plecostoma*, *Myriostoma*, *Disciseda*, *Broomeia*.

c. *Nidularieï*: peridium globosum, dein elongat. v. obovatum, coriac., superne fatiscens, fovens peridiola lenticularia plura, carnoso-indurata, longe funiculata v. sessilia et in muco nidulantia, ovulis ac filis v. massa pulveracea plena. Fungilli terrestr. v. lignicolæ: — *Cyathus*, *Crucibulum*, *Nidularia*.

d. *Polysacceï*: peridium varium, quibusd. stipitat. et terræ immersum, superne fatiscens, intus cellulosum v. cavum et peridiola ∞-1, ovuligera fovens: — *Polyangium*, *Endogone*, *Arachnion*, *Ciliciocarpus*, *Scolecocarpus*, *Polygaster*, *Polysaccum*, *Mitremyces*?

FAM. 14. LYCOPERDINI.

Peridium simpl. v. duplex, sessile v. stipitat., floccosum, membranac. -+— durum v. corticatum, quibusd. columellatum v. hypogeum. Gleba primitus homogenea, dein pultacea, tandem pulverulenta, in capillitium et ovula basidiogena discedens. Fungi minuti v. maximi, terrestres, rarius epiphyti.

a. *Trichodermei*: peridium difforme, laxum, plocenchymaticum, medio fatiscens, ovulis in strato peripherico v. discoïdeo, capillitio subnullo: — *Hyphelia*, *Trichoderma*, *Lasioderma*, *Ostracoderma*.

b. *Lycoperdei*: perid. simpl. v. corticatum, superne dehiscens v. fatiscens, sæpe stipitatum; capillitium flocossum: — *Lycoperdon*, *Bovista*, *Hippoperdon*; *Phellorina*, *Mycenastrum*, *Endoneuron*; *Tulostoma*, *Schizostoma*, *Calostoma*.

c. *Sclerodermei*: perid. coriaceum, suberosum v. corneum, quibusd. hypogeum; capillitium in cellulas ovuligeras efformatum: — *Hyperrhiza*, *Melanogaster*, *Cenococcum*, *Elaphomyces*, *Scleroderma*, *Diploderma*, *Mylitta*, *Anixia*....

d. *Podaxidei*: peridium columellatum dein inferne a columella, stipiti nudo v. valvato continua, solutum, pileiforme; capillitium in septa pilei gyrosa ovuligera efforman-

dum. Fungi regionum calidiorum et pauci europæi, Lycoperdinis, Tuberinis et Agaricinis intermedii: — *Cauloglossum, Podaxon, Endoptychum* Cz.; *Secotium, Gyrophragmium, Montagnites? Polyplocium.*

e? *Batarrei:* peridium medio v. radiatim fissile; columella elongata pileifera v. brevis, superne capillitium ovuligerum reticulatum gerens. An Phallinis affiniores? — *Batarrea, Trichaster, Spadonia, Pilacre??*

FAM. 15. PHALLINI (Lyomycetes Lév.).

Fungi plerumque graveolentes; peridium volvæforme, simpl. v. duplex et gelatina distentum, radicatum, ruptile: columella brevis v. longa, superne cava et fenestrata, radiatofissa v. pileifera, radiis intus — pileo v. capitulo extus hymenio fluxili ovuligero obductis; basidia 4-5-6-ovulata.

a. *Clathrei:* columellæ brevis cavæ coloratæ radii 3-∞, apice connati, simpl. v. clathrati, solidi v. fistulosi, intus pulpa fluxili ovuligera scatentes: — *Laternea, Coleus, Ileodictyon; Aserophallus, Clathrus.*

b. *Lysurei:* columellæ exsertæ radii patentes et pulpa ovuligera scatentes: *Lysurus, Aseroë, Calathiscus, Staurophallus.*

c. *Phallei:* peridium duplex, gelatina distentum, columella crassa cava, peridio rupto cito increscens et passim velata; capitulum v. pileus extus pulpa colorata fluxili ovuligera scatens: — *Foetidaria, Sophronia, Simblum, Dictyophora, Phallus, Hymenophallus.*

D. Ovula variæ originis.

FAM. 16. TUBERINI s. SARCOGASTERES.

Fungi solidi, hypogei, rarius epigei v. epiphyti, subglobosi v. tuberiformes, vix radicati, sed basi alsorbente +— notabili præditi, passim graveolentes. Peridium tenue, læve v. tuberculatum (ni deficiat), adhærens et partim intrusum carni internæ, quæ primitus homogenea, dein mollior, tandem lacunosa v. marmorata et solidior fit. Lacunæ (cellæ, venæ) plerumque anfractuosæ v. reticulatæ ovula immediate conglobata, basidiogena v. ascis inclusa fovent.

a? *Sclerotiei:* fungilli solidi, subglobosi, corticati, epi-entophyti, parenchymate interno granuloso (ovula?). Veri a myceliis torpidis compactis distinguendi: — *Sclerotium, Rhizoctonia...*

b. *Splanchnomyceteï:* hypogei, carnosi, lacunis ovuligeris absque basidiis et ascis: — *Splanchnomyces.*

c. *Hymenangiei:* hypogei <, quidam decorticati, lacunis basidia conferta 2-4-ovulata foventibus: — *Hymenogaster, Gautiera, Hymenangium, Hysterangium, Octaviania.*

d. *Tubereï:* hypo-raro epigei, lacunis ascos ovuligeros et paraphyses foventibus, ovulorum tunica simpl. v. duplici: — *Genea, Hydnobolites, Balsamia, Delastria, Choiromyces (Rhizopogon), Tuber, Picoa, Hydnocaryon, Bromicolla* (Eichwald)?

## *Ordo IV. Hymenomycetes*

s. Ectomycetes.

Fungi geo-phyto-zoogeni v. in aliis fungis parasitantes, microscopici v. maximi (tripedales) gelatinosi, viscidi, cambio abundantes, carnosi, coriacei, lignosi, passim lactescentes v. lacrymantes, generatione æquivoca v. ex ovulis propriis, primitus in *mycelium* floccosum, fibrillosum, spongiosum, grumosum, membranaceum, tuberosum et rhizomorphum, superficiale v. latens, perenne, annuum, fugax v. obsoletum, evolvendis orti; novelli formam *tuberculi* nudi v. velati præ se ferunt, quod increscens effiguratur in *thallum* (stroma) varium, undique v. ex parte ovuligerum, laminarem, tubercularem, in cupulam, cyathum, tubulum, pileum, mitram, capitulum, clavulam (integra v. lobata), in stipitem simpl. v. ramosum, hymenio obductum v. sterilem-fulcrantem, a thallo fertili —+— discretum, radice propria v. e mycelio oriunda solo affixum; velo nullo simpl. v. duplici, —+— durabili, in volvam, annulum v. cortinam stipitis et tegmen supremum pilei (maculare Agarici muscarii) efformando.

Hymenium ascophorum v. basidiophorum (ento-exosporum), thallum omnem obducens (amphigenum), v. superum v. inferum, raro thallo destitutum (Hydnum fasciculare), læve v. rugosum, plicatum, lacunosum, verrucosum, in lamellas, tubulos, poros, aculeos effiguratum, passim processus thalli (tramas) includens, definit. v. indefinitum, discretum v. cum thallo confusum, persistens, deliquescens v. fatiscens; *asci* utplurimum 8-ovulati et paraphysibus concomitati; *basidia* mucronata, (sterigmophora, vera) v. filiformia et ramosa, ovula quaterna v. solitaria, 2-6 fulcrantia et passim vesiculis peculiaribus (cystidiis, antheridiis) stipata. *Ovula* asco-trichobasidiogena, guttulis oleosis, solitariis v. pluribus foeta, quibusdam longissima, loculosa v. septata, tegmine simplici (?), nucleo varie colorato (fungi leuco-rhodo-ochro-melanospori). Familiæ 4 sequentes:

FAM. 17. HELVELLINI.

Thallus sessilis v. stipitatus; hymenium e paraphysibus et asceis 4-6-8-ovulatis; ovula simpl. v. composita, matura subito explodenda.

a. *Patellarieï:* minuti, cupulati, hymenio supero, ovulis compositis: — *Cryptodiscus*, *Melittiosporium*, *Patellaria.*

b. *Geoglossei:* stipitati, carnosi, clavula hymenophora, asceis tubulosis, ovulis compositis, longissimis: — *Geoglossum.*

c. *Pezizei:* thallus utplurimum cupulæformis, sessilis v. stipitat. (primitus clausus), rarius planus v. subglobosus (Agyrio); hymenium definit. v. indefinitum (Pyronemei); ovula simplicia: — *Agyrium; Propolis*, *Stictis*, *Volutella*, *Peziza*, *Bulgaria*, *Ascobolus*, *Hymenobolus*, *Sarea*, *Cyphella*, *Cenangium*, *Tympanis;* — *Pyronema*, *Midotis.*

d. *Morchellei:* (et Leotiei), stipitati, hymenio mitram v. capitulum obducente lævi, plicato v. lacunoso, asceis clavatis v. tubulosis, ovulis simplicibus: — *Vibrissea*, *Mitru-*

*la, Spathulea, Leotia; — Verpa, Helvella, Morchella, Gyrocephalus.*

FAM. 18. TREMELLINI.

Thallus utplurimum sessilis et minutus, gelatinosus, carnosus v. fibrosus; hymenium e basidiis filiformibus fertilib. et sterilibus (paraphyses?) ac ovulis simplicibus, compositis v. concatenatis, dein pulverulentum v. deliquescens.

a. *Tuberculariei:* minuti, superficiales v. erumpentes, subglobosi, cupulati v. pileolati; basidia continua v. septata, ovulis simplicibus, passim concatenatis v. conglobatis, dein pulverulentis et inspersis. (Hi et Podisomei Coniomycetis utplurimum adsociantur): — *Sphaeelia, Hymenula, Myrothecium, Melanostroma, Gliostroma, Chroostroma, Crocisporium, Epicoccum, Dacryomyces, Periola, Chætostroma, Fusarium, Tubercularia, Ditiola. . . .*

b. *Podisomei:* thallus carnoso-gelatinoso-fibrosus, expansus, pulvinatus v. clavatus; basidia filiformia, ovula septata v. loculosa fulcrantia et passim sterilia: — *Selenosporium, Exosporium, Coryneum, Podisoma.*

c. *Tremellei:* thallus gelatinosus, polymorphus; hymenium confusum, dein diffluens; basidia filiformia, sterilia v. ovulis simplicibus, acrogenis: — *Coryne, Myxarium, Hyperomyxa, Tremella, Nematelia, Exidia. . . .*

FAM. 19. CLAVARIINI.

Fungi minuti v. maximi. Stipes simplex, clavatus v. ramosus, hymenio lævi basidiophoro obductus; basidia filiformia uniovuluta (Pistillaria, Calocera, an huc?) v. veras cum mucronibus ovuligeris, utplurimum quaternis: — *Pistillaria, Guepinia, Crinula, Calocera, Eriocladus, Merisma, Sparassis, Clavaria, Gomphus..*

FAM. 20. AGARICINI *nob.*

Thallus utplurimum pileiformis et stipitatus; hymenium inferum, raro amphigenum v. superum (in resupinatis), figuratum v. læve; basidia vera c. mucronibus ovuligeris, basi continuis v. articulatis, sæpius quaternis.

a. *Telephorei:* hymenium inferum v. amphigenum, subconfusum, vix figuratum, persistens: — *Cyphelia*, *Leiostroma*, *Coniophora*, *Cladoderris*, *Hymenochæte*, *Corticium*, *Stereum*, *Telephora*, *Auricularia*, *Cora*; — *Xylomyzon*, *Phlebia*....

b. *Hydnei:* hymenium effiguratum in aculeos, tubercula, granula, cristasve dentatas v. setosas; thallus quibusd. obsoletus: — *Cymatoderma*, *Grandinia*, *Radulum*, *Hericium*, *Irpex*, *Hydnum*, *Sistotrema*....

c. *Polyporei:* hymenium tubulosum, porosum, alveolatum v. sinuosum: — *Laschia?* *Boletus*, *Fistulina*, *Polyporus*, *Porothelium*, *Favolus*, *Hexagona*, *Glæoporus*, *Trametes*, *Dædalea*; *Hymenogramme*, *Merulius*....

d. *Agaricei:* hymenium plicatum v. lamellosum: — *Cyclomyces*, *Lenzites*, *Schizophyllum*, *Pterophyllus*, *Helicomyces*, *Cantharellus*, *Xerotus*, *Agaricus* (Amanita)..

*Nota.* Agaricini perquam numerosi repetitis egent divisionibus. In Epicrisi systematis mycologici Cl. Fries ab Agaricis veris adhuc sequentia separantur genera (?): Trogia, Panus, Lentinus, Marasmius, Nyctalis, Russula, Lactarius, Hygrophorus, Stylobates, Gomphidius, Paxillus, Cortinarius, Bolbitius et Coprinus.

Agarici veri (Fries) discedunt in Coprinarios, Pratellas, Derminos, Hyporrhodios et Leucosporos et sic subdividuntur:

1. *Coprinarii*, ovulis atris: Psathyrella et Panæolus.

2. *Pratellæ*, ovul. atro-purpureis v. fuscis: Psathyra, Psilocybe, Hypholoma et Psalliota.

3. *Dermini*, ovulis fulvis-brunneis: Crepidotus, Galera, Naucoria, Flammula, Hebeloma et Pholiota.

4. *Hyporrhodii*, ovulis rubellis v. roseis: Eccilia, Nolanea, Leptonia, Clitopilus, Entoloma, Pluteus et Volvaria.

5. *Leucospori*, ovulis albis: Pleurotus, Omphalia, Mycena, Collybia, Clitocybe, Tricholoma, Armillaria, Lepiota, et Amanita.

*Hydni* et *Polypori* sectiones: Mesopus, Pleuropus, Merisma, Apus et Resupinatus.

*Boleti* sectiones: Ochrosporus, Derminus, Hyporrhodius et Leucosporus.

Cortinario, Lactario et Hygrophoro propriæ sectiones.

## Class. II. Algæ.

Corpora amphorganica (zoophyta) summe heteromorpha, microscopica, simplicissima v. in orbe organico e compositis maxima (Microcystis pyrifera ad 200 orgyas quandoque extensa), in aqua marina v. dulci (agriohydricæ), gelida v. tepida oriunda, rarius e nive, saxis, terra, ligno humidis, imo e plantis variis, animalibus et corpore humano morboso pullulantia, colore omnivario, viridi, coccineo, roseo, violaceo, cæruleo, luteo, fusco etc., sponte, aëre v. siccatione plerumque alterabili, insignia, rarius hyalina v. alba.

Algæ infimæ constant e cellula unica (vesicula microscopica, utriculus, ovulum permanens), raro solitariæ, sæpius gregariæ, in aqua præcipue stagnante v. muco matricali (gelina) oriundæ. Hæ cellulæ, ovulis animalium et sporis analogæ, succo granuloso, gonidiis sparsis v. conferruminatis, amylidiis v. vesiculis filialibus plenæ, vita individuali et propagativa excellentes, omnivarias formas præ se ferunt, imo maximæ in tubulos longissimos simplices v. ramosos (Vaucheria) v. in plantas radicatas, caulescentes et foliatas (Caulerpa etc.) extenduntur variasque metamorphoses internas peragunt. Cellulæ in seriem unicam nexu levi v. arctiori connatæ et sæpius per divisionem repetitam intra tubum gelineum (matricalem) multiplicatæ, *catenulas* effingunt, liberas tranquillas, oscillantes v. copulativas, vario modo coordinatas et sæpe gelina mucosa v. solidiori, amorpha v. figurata circumdatas; cellulæ vero in stratum unicum v. plura coadunatæ *laminas* tenuissimas, monostromaticas v. crassiores, dipolystromaticas, integras, fissas, planas, tubulosas v. clathratas constituunt, v. denique polymorphæ strata varia *thalli* +— crassi, laxi v. solidi, dichotomo-sectilis v. pinnati, caulescentis et foliati effigurant, qui *fulcro* basilari scutato, subgloboso, stupaceo, in laminam latam expanso (Alsidium cæt.) v. fibras scutulatas (pythmenes) agente, utplurimum adfingitur.

Cellulæ *thallinæ*, vitæ individui subordinatæ, quoad genesin, magnitudinem, formam, nexum, coordinationem, contenta et gelinam intercedentem conformes v. in organis ejusdem speciei variæ, raro regularitatem cellulosæ plantarum verarum attingentes, succo vix granuloso v. gonidiis sparsis v. —+— compactis plenæ (crypto-coelo-holo-monogonimicæ), vacuæ v. entocystide (utriculo primordiali) prægnantes, effigurant textum filarem, parenchyma varium, epenchyma (c. entocystid.) et perenchyma (nucleiferum, monogonimic.) thalli — ejusque formam externam filarem, saccatam, entericam, laminarem, dichotomam (solemniorem), cribrosam, caulescentem, foliatam et ramosissimam determinant; differt præterea thallus, *ampullis* (vesicæ aëreæ, natatoriæ), lacunis muciferis, ramis ramulisque conformib. v. heteromorphis præditus et fila confervina hinc inde agens.

Thallus, inprimis caulis ejus crassior, præter peridermidem gelineam, strata varia interna duo — corticale et medullare (epithallium et endothallium) ac intermedium (mesothallium) v. plura offert, et pro varia cellular. et stratorum indole — flaccidus, gelatinosus, spongiosus, rigidus, tenax, fragilis, membranaceus, coriac., carnosus, cartilagineus, corneus v. lignosus esse solet.

Propagatio Algarum *inferiorum* per generationem æquivocam, deduplicationem (temnogenesis varia in Diatominis et Nostoceis), gonidia libera, sæpe mobilissima (tentaculata, oculata?) v. conferruminata et propagula absolvitur; *Hydrodictyon* — viviparum; *perfectiores* per stolones, turiones (Alsidium, Furcellaria etc.), gemmas (Charæ etc.) et prolem, e variis thalli plagis oriundam, multiplicantur, v. *ovula* mono-dimorpha, quandoque *antheridiis* concomitata gerunt.

Ovula (sporæ auctorr.), nucleo granuloso fusco v. rubro et tunica pellucida, passim duplici amicto, ovulis animalium simillima, globosa, ellipsoidea, ovi-pyriformia v. elongata, externa, solitaria, sorosa (an utriculi uniovulati?) v. thallo in-

clusa — aut glomerata, e cellulis amylideis internis plerumque oriunda et in *cavernulis* thalli (favellidia I. Ag.) latentia, vel in *cistulis* clausis v. hiantibus (coccidia, keramidia) —+— exsertis et pedunculatis, thallo continuis eique sæpius histologice isomorphis, conferta, filis intertexta v. placenta dendroidea v. compacta suffulta; differunt *favellæ* Ceramialium e cellula unica formatæ, gonidiis ejus in ovula plura compactis. Algæ heterogoniæ (rubræ), quasi dioecæ, producunt alia ovula (epithallina), globosa v. oblonga, solitaria v. conferta, thallo v. segmentis ejus (ooclonia, oophylla, oocladia, stichidia) immersa, angulatim, cruciato- oblique v. zonatim 4-partita, rarius bi-tri-partibilia (*Tetroidia* gono-stauro-loxo-v. discoschiza *nob.;* Sphærosporæ I. Ag.), metamorphosin primam ovuli animalium simulantia. *Antheridia* (paraspermia Kzg., spermocystæ) in Fucinis a Thuretio et Decaisneo nuper observata, sistunt vesiculas lutescentes, bitunicatas, cercariis plenas, vesiculis seminalibus animalium inferiorum facile comparanda, in aliis Algis inquirenda; hæc antheridia Fucorum, filis articulatis suffulta, in goniangiis (cryptis intrusis) ostiolatis, propriis v. una c. ovulis reperiuntur; hinc Algæ mono-heteroclinæ v. mon-dioecæ veræ dantur. *Goniangia* per omnem thallum sparsa (Splanchnidii) v. ad certas partes thalli laxiores —+— conferta, *synangia* efficiunt. *Nemathecia* s. *Sirothelia* (Tylocarpeae cæt.) e paraphysibus densis et tetroidiis simplic. v. concatenatis, immersis constant. Characearum organa reproductiva suo loco adumbranda.

Thallus variarum Algarum insuper profert paracarpia: *spermatoidia* Kzg. stichidiis subsimilia, — Cuttleriæ etc.; *opseospermatia* Kzg. — ovula nuda? Alariæ, Ulotricheae. cæt.; *cryptæ paranemophoræ* (cryptostomata Kzg.) s. foveolæ, fila confervina (cryptonemata Kzg.), rarius in prolem excrescentia, exserentes, in Fucariis, nec Algis rubris, obviæ. E quolibet ovulo v. gonidiis mobilibus, singulis v. conferruminatis Alga prodit immediate.

Chemia in Algis multis *chlorophyllum* viride (amorphum?) et Algis rubris proprium, rarius flavum v. fuscum, *amylidia*, a jodo colore cæruleo, fusco v. rubro-violaceo tingenda, *gonidia* (endochroma) sæpius amylacea, succum rubrum (Phycoerythrin Kzg.), plerumque valde alterabilem, *phycocyanum*, indigo subanalogum, colorem cœruleum —+— purum Oscillariis, Thoreæ, Vaucheriæ, Lemaneæ, Batrachospermo cæt. siccatis impertiens, et *phycohæmatinum* (Rytiphlææ tinctoriæ) demonstravit. Quibusdam principium extractiv. et *huminum?* Algas siccatas nigrefaciens, saccharum, cera, resina, oxid. ferri et mangani, sulphas sodæ et potassæ, sulphas et phosphas calcis, alumina, chloretum sodii et magnii ac jodeta et brometa varia insunt; silicia abundat in Diatominis et carbonas calcis in pluribus; prævalet tamen *gelina* variæ indolis, magis ad mucum, gelatinam, pectinum v. albuminam accedens aut glutinosa (hinc chartæ firmiter plures adhærent), in cellulosam mollem, cartilagineam v. corneam ac peridermidem solidescens.

Algæ plurimæ plantas crypto- et phanerogamas examussim æmulantur, at ovula earum illis animalium v. infusoriis quibusdam motu et forma simillima, antheridia potius c. spermocystis comparanda, animalem quoque naturam probe confirmant; quinimo Cl. Ehrenberg agmen Diatomalium numerosissimum ad Infusoria duxit, non exclusis Desmidinis amylaceis, utpote in Diatominis simplicioribus natura animalis emineat, qua attributum partiale Regni amphorganici et aliis Algarum ordinibus familiare. Oscillariæ, motu voluntario, oculis? et tentaculis provisæ, ad animalia pertinere quibusdam videbantur Species simpliciores, Palmellinarum præcipue, pro re nata, in animalia v. alias algas evolvi visæ?. Ex observationibus Cl. Kützing aliorumque algologorum jam liquet mirum naturæ vegetabilis et animalis connubium his in corporibus; multa interim mysteria huedum latere videntur, in posterum studio Algarum sinceriori develanda, quæ phæno-

menis curiosis de Oscillarieis, Zygnemeis, Ulothricheis, Hydrodictyone, Protococceis, Nostoceis, Achlya aliisque jam notis, subjungenda erunt.

Genera a Kützingio aliisque Algologis stabilita, plura superflua v. inexacte delineata, nec more plantarum facile ab organis fructificationis vacillantibus, microscopicis petenda, sed investigationem histologicam, morphologicam et chemicam Algæ totius postulantia, novo egent examine, habito respectu ad summam alterabilitatem tam formæ externæ quam organisationis internæ Algarum. Tentavimus in Tetractyde novam generum coordinationem, sed studio Algarum protracto et novo earum examine edocti, magis naturalem coordinationem curavimus, nec perfectam censendam, antequam generum et specierum plurium metamorphoses essentiales et accidentales probe cognitæ fuerint. Liceat adinterim Algarum genera, in posterum exactius definienda, omnissis dubiis, in sectiones duas, ordines 7 et familias 25 disponere modo sequenti.

Sectio I. ISOGONIÆ nob. Gelina effusa v. figurata, copiosa v. parca; aliis thallus filaris v. laminaris, virens v. allochrous Ovula +— distincta, monomorpha. Quædam e cellula solitaria polymorpha constant. Nascuntur plerumque e solo humido v. in aqua dulci.

## *Ordo I. Diatomales*

(Minerozoidia Perty).

Algæ microscopicæ, agrio-halohydricæ, sistentes cellulas polymorphas (individua, corpuscula, frustula), solitarias v. conjunctas, gelinæ inditas et confervas v. ulvas æmulantes, per deduplicationem et reduplicationem multiplicandas, virentes v. allochroas, sæpius testa silicea præditas et gonidiis viridibus, flavis v. fuscis ac guttulis oleosis plenas. Cellulæ hæ (an potius ovula?) formam sphæricam, ellipsoideam, hexagonalem, cymbæ, lunulæ, fusi, cunei, pyramidis, cubi rec-

tanguli v. obliqui, bacilli, prismatis etc. præ se ferunt, liberæ, sessiles v. pedunculo simplici v. dichotomo suffultæ et disjunctæ sunt v. in tæniam, laminam orbicularem v. angulosam v. filum moniliforme, fasciculum, globulum radiosum, stellulam debili v. firmiori negotio consociantur. Gelina in matricem amorpham, ac densior — in fila cellulifera effiguratur (Schizonema cæt.); fila vero conglutinata frondem heteromorpham, quandoque ovuligeram (Micromega cæt.) efformant. Plures protogeæ aborigines, nunc extinctæ, in massas minerales conversæ — v. in iis latent. Omnes a Cl. Ehrenberg, invita natura, ad Infusoria relatæ, a Kützingio aliisque nuper revisæ et Algis redditæ, sed Meneghini (Sulla animalità delle Diatomee, 1846) Diatomaceas siliceas ad animalia pertinere, denuo contendit. *Apparet et in minimis maximus ille Deus!* nec non scena miraculosa vitæ vegeto-animalis, ovulorum permanentium. Familiæ 2 (plures?), genera multa, species fere 1000 notæ; at in opere Cl. Kützing (*Die kieselschaligen Bacillarien od. Diatomeen*, 1844) Diatomaceæ Siliceæ in sectiones 3, familias 19 et genera 72 discedunt; lis interim de natura et organisatione illarum adhuc sub judice est et Naviculæ organisatio alias exponitur in Schleiden, Grundz. d. wissenschaftl. Botanik, 1846.

FAM. 1. DESMIDINÆ (Desmidiaceæ *auctor.*).

Cellulæ gonidiis viridib. et amylidiis plenæ, polymorphæ: globosæ, elongatæ, hemicyclicæ v. angulatæ et radiatæ, solitariæ, geminatæ v. plures, in glomerulum, discum immediate v. ope membranulæ gelineæ — aut in catenulas, tubo gelineo inclusas, conjunctæ, temnogenesi (v. et gonidiis effusis?) multiplicandæ. Algæ microscop., agriohydricæ et marinæ, plerumque virides, torpidæ (granulorum apicalium Closterii motus notabilis), differunt a sequentib. præcipue testæ siliceæ defectu et sæpe c. iis confusæ. — Genera: *Tessarthra*, *Sphærastrum*, *Closterium*, *Titmemorus*, *Staurastrum*, *Xanthi-*

*dium, Euastrum, Crucigenia; Gonidium, Pediastrum, Scenedesmus, Desmidium.....*

FAM. 2. DIATOMINÆ s. Diatomaceæ.

Algæ microscop. agriohydr. et marinæ, cellulas polymorphas, solitar. passim mobiles v. conjunctas referentes. Cellularum testa s. lorica silicea, diaphana, gonidiis flavis, fuscis v. virentib. et guttulis oleosis plena, bivalvis <, globosa, discoidea v. 4-gona ab intercedente lamina partibili (schizoplata *nob.*, latera primaria Kzg.) annulari, cylindrica v. conduplicata et quibusd. vittata; *valvæ* planæ v. convexæ, passim ostiolatæ (?) v. areolatæ, sæpe striis transversis perviis v. interruptis, v. et sulco (fissura) longitudinali medio notatæ. Trib. an famil. 4 v. plures?

a. *Biddulphieæ nob.* (Diatomeæ areolatæ Kzg.): cellulæ silicæ astomæ, compressæ, discoideæ, rhomboid., angulatae v. radiatæ, solitariæ v. isthmi gelinei ope concatenatæ; testæ valvis utplurimum scrobiculatis et quibusd. porosis. Plerumque marinæ et quædam fossiles; famil. 6, gen. 15, spec. 95 a Kützingio descriptæ: — *Dictyocha, Mesocena, Actiniscus; Triceratium; Zygoceros, Biddulphia, Odontella, Isthmia; Tripodiscus; Amphipentas, Amphitetras; Actinocyclus, Coscinodiscus...*

b. *Grammatophoreæ n.* (Diat. vittatæ Kzg.): cellulæ silic. læves v. striatæ, astomæ v. monostomæ, cuneiformes, flabellatæ, sessiles v. stipite gelineo suffultæ — aut tabellares et in tabulas v. tænias connexæ; schizoplata vittata. Fam. 3, gen. 12, spec. 61, Kzg.: — *Grammatophora, Tabellaria.... Hyalosira, Tessella... Licmophora, Podosphenia...*

c. *Diatomeæ n.* (Diat. striatæ astomæ Kzg.): cellulæ astomæ globosæ, elongatæ, compressæ, discoid., naviculares v. cuneiformes, solitar. v. concatenatæ; valvae plerumque striis transv. perviis v. interruptis notatæ. Fam. 5, gen. 18, spec. 259, Kzg.: — *Epithemia, Eunotia, Himantidium. Meridion.*

*Denticula*, *Fragillaria*, *Diatoma*.. *Cyclotella*, *Pyxidicula*, *Podosira*, *Melosira*.. *Campylodiscus*, *Surirella*, *Bacillaria*, *Synedra*.

d. *Naviculeæ n.* (Diat. striatæ mono-distomat. Kzg.): cellulæ naviculares, rectæ, curvatæ, trapezoid. v. cuneif., solitar. et mobiles v. sessiles, stipitatae aut plures gelinæ immersæ v. tubulis gelineis inclusæ, qui passim diramificantur v. in frondes polymorphas, quandoque ovuligeras coalescunt; valvæ transversim striatæ et infera v. utraque ostiolata. Fam. 5, gen. 26, spec. 347? Kzg.: — *Cocconeis*.. *Achnanthes*, *Cymbosira*.. — *Cymbella*, *Cocconema*, *Encyonema*.. *Sphenella*, *Gomphonema*.. *Navicula*, *Ceratoneis*, *Stauroneis*, *Diadesmis*.... *Frustulia*, *Berkeleya*, *Homœocladia*, *Schizonema*, *Micromega*, *Dickiea*..

## *Ordo II. Confervales.*

Catenulæ virides v. allochroæ, tubulo gelineo peridermico plerumque inditæ, simpl., ramosæ, copulativæ v. reticulatæ, entocystide et gonidiis varias metamorphoses peragentibus. Ovula interstitialia, lateralia v. indistincta:

### FAM. 3. PROTONEMINÆ *nob.*

Catenulæ tenerrimæ, mucedineæ, achroæ, rubentes v. sordide coloratæ, simplices v. ramosæ, sæpius brachyarthræ, cellulis lateralibus v. terminalib. oomorphis.

a. *Leptomiteæ:* in fluidis variis, imo metallicis, salitis, in syrupis, acidis, oleo pingui et nive oriundæ, mucedineis subsimiles: — *Hygrocrocis*, *Leptomitus*, *Sirocrocis*, *Nematococcus*, *Chionyphe*. . . .

b. *Protonemeæ:* terrestres, passim radicatae et virentes: — *Gongrosira*, *Protonema*.

### FAM. 4. OSCILLARINÆ.

Tubuli gelinei, catenulas discarthras v. sphærarthras, varie coloratas includentes, passim vaginulati v. in strato mucoso conjuncti, ovulis rarius distinctis.

a. *Oscillarieæ:* tubuli catenulas discarthras inclu-

dentes, cito crescentes, oscillantes v. serpentes, vaginulati v. strato mucoso conjuncti (puncta ocularia et tentacula in quibusdam observata): — *Spirulina, Oscillaria, Phormidium, Microcoleus, Trichodesmium....*

b. *Leptotricheæ:* tubuli tranquilli similes v. gonidiis in fila longa coalitis pleni: — *Leptothrix, Synploca, Entothrix...*

c. *Lyngbyeæ:* tubuli discarthri, simplices v. ramosi, ovulis lateralibus: — *Lyngbya, Leibleinia, Blennothrix, Calothrix, Dictyonema....*

d. *Scytonemeæ*: tubuli discarthri v. sphærarthri, vaginati, ovulis interstitialibus: — *Scytonema, Sirosiphon...*

FAM. 5. CONFERVINÆ.

Catenulæ virides, rarius achroæ, flavescentes v. purpurascentes, simpl. v. ramosæ, peridermide membracea passim cinctæ, gonidiis mobilibus, demum in ovula fusca v. rubra conglomeratis.

a. *Zygnemeæ:* catenulæ simplices <, demum copulatæ; ovula fusca v. purpurasc. in trabeculis copulativis v. in cellulis: — *Mougeotia, Staurospermum, Spirogyra, Zygnema, Zygogonium* (Kzg.).

b. *Conferveæ:* catenulæ simpl. v. ramosæ; gonidia dispersa v. demum in ovula interstitialia conferta: — *Sphæroplea, Psichohormium, Conferva, Rhizoclonium, Cladophora, Crenacantha, Pilinia...*

c. *Ulotricheæ:* catenulæ mucosæ, tenerrimæ, brachyarthræ; gonidia exigua, demum in annulos et globulos quaternos, v. in ovula mobilissima (gonidia oculata?) effigurata: — *Fischeria, Ulothrix, Stygeoclonium.*

d. *Hormidieæ:* catenulæ brachyarthræ, globulis gonimicis integris v. demum concentrice multiplicatis: — *Gloeotila, Hormidium; Schizogonium, Bangia....*

FAM. 6. HYDRODICTYINÆ.

Cellulæ elongatæ, in reticulum pentagonale connexæ, vi-

viparæ: gonidia demum in reticula novella, cellulis inclusa effigurata: *Hydrodictyon*, *Microdictyon*, *Talarodictyon*.

## *Ordo III. Ulvales.*

Ovula sparsa, aggregata, ordinata v. concatenata, in gelina +— abundante; perfectioribus thallus filaris v. laminaris cellulosus et ovulifer.

FAM. 7. PALMELLINÆ.

Ovula globosa, simplicia per exogenesin v. endogenesin multiplicata, viridia rubentia v. achroa, in gelina pauca v. copiosa nidulantia.

a. *Cryptococceæ:* globuli achroi v. rubentes, minimi, in strata varia aggregati; nascuntur ad corpora humida, in aquis destillatis, infusis, aceto, thermis etc.: *Cryptococcus*, *Ulvina*, *Sphærotilus*.

b. *Botrydineæ:* ovula intra vesiculas maternas durabiles aggregatas multiplicata: — *Botryocystis*, *Botrydina*, *Pleurococcus*, *Hæmatococcus*, *Microcystis*.

c. *Palmelleæ:* ovula simplicia in gelina parca v. copiosa, indefinità nidulantia: — *Protococcus*, *Micraloa*, *Coccochloris*, *Anacystis*, *Palmella*, *Oncobyrsa*, *Tetraspora*.

d. *Hydrococceæ:* ovula simpl., v. geminata, in gelina figurata seriata: — *Actinococcus*, *Hydrococcus*, *Hydrurus*...

FAM. 8. NOSTOCHINÆ.

Ovula concatenata, vesiculis majoribus (ampullis v. ovulis?) intercepta v. in catenulas, sursum attenuatus, basi oomorphas, transformata, utplurimum gelinæ figuratæ immersa v. innata.

a. *Limnochlideæ*: tubuli continui polygonimici, medio vesiculiferi et in laminulas coaliti: — *Limnochlide*.

b. *Nostoceæ:* ovula flexuoso-concatenata c. vesiculis interstitialibus, gelinæ figuratæ passim immersa: — *Nostoc*, *Anabaina* (et *Sphærozyga*), *Spermosira*...

c. *Rivularieæ*: catenulæ passim subulatæ et vaginatæ, basi oomorphæ, gelinæ figuratæ (sphæricæ) innatæ: —

*Physactis*, *Heteractis*, *Chalaractis*, *inactis*, *Limnactis*, *Rivularia*, *Dasyactis*, *Euactis* (Kzg.).

d. *Mastichonemeæ:* catenulæ passim subulatæ et vaginatæ, basi oomorphæ, liberæ, denudatæ: *Merizomyria*, *Mastichonema* (et *Mastichothrix* Kzg.), *Schizosiphon* (et *Geocyclus*).

FAM. 9. CHÆTOPHORINÆ.

Catenulæ ramosæ, iso- v. heteromorphæ, virides v. allochroæ, gelina obductæ; ovula lateralia solitaria v. conglobata (pleuroæ).

a. *Chætophoreæ:* catenulae ramosæ, brachyarthræ: — *Chrolepus*, *Cruoria*, *Colœtphora*.

b. *Chantransieæ:* catenulæ ramosæ e cellulis elongatis: — *Chlorotylium*, *Chantransia*, *Bolbochœte*, *Coleochœte*.

c. *Draparnaldieæ:* catenulæ heterocladæ: *Draparnaldia*.

d. *Batrachospermeæ:* catenulæ corticatæ, ramis dense verticillatis, ovulis conglobatis lateralibus (gemmæ?): — *Batrachospermum*.

FAM. 10. ULVINÆ.

Thallus laminaris, mono-distromaticus v. tubularis, cellulis conformibus, sparsim v. quaternatim oomorphis.

a. *Enteromorpheæ*: thallo tubulari: — *Enteromorpha*.

b. *Phycoserideæ*: lamina distromatica (tubo compresso): — *Phycoseris*, *Diplostromium* Kzg.

c. *Ulveæ*: lamina monostromatica viridi: — *Ulva*.

d. *Porphyreæ*: lamina monostrom. purpurascente: — *Porphyra*.

## *Ordo IV. Codiales.*

Thallus e cellula unica, globosa v. longissima, simpl. v. ramificata, radicante, v. e pluribus implicatis, rarius subarticulatis. Gonidia intra thallum sparsa, mobilia v. in ovula externa conglobata.

FAM. 11. SAPROLEGNINÆ.

Tubuli clavati, subarticulati, radicantes, pallidi, ovulis mobilibus monadoideis < inclusis. Ad insecta, pisces, lignum et in aquis variis: — *Achlya*, *Saprolegnia*, *Mycocoelium*; *Stereonema* et *Phæonema*? (Kzg.)

FAM. 12. VAUCHERINÆ.

Cellula unica radicans, subglobosa v. longissimæ, simpl. v. ramosæ et cæspitosæ. Gonidia mobilia interna v. ovula externa: — *Hydrogastrum*, *Vaucheria*, *Bryopsis*, *Valonia*.

FAM. 13. CODIINÆ.

Thallus figuratus, radicans, e tubulis (cellulis) longissimis ramosis, pluribus implicatis; ovula lateralia; quibusdam tubuli articulati: — *Ascothamnium*, *Anadyomene*; — *Rhipozonium*, *Codium* (*Spongodium*), *Cladothele*.

FAM. 14. CAULERPINÆ.

Cellula unica (maxima), in thallum coriaceum, caulescentem, polyrhizum, sæpius ramosum, appendiculatum v. pinnatum effigurata, intus fibris flexuosis intertextis et gonidiis sparsis v. conglobatis farcta: — *Caulerpa* (*Chauvinia*, *Chemnitzia*, *Herpochæta*), *Tricladia*.

Sectio II. HETEROGONIÆ. Algæ marinæ utplurimum. Thallus rubens v. olivaceus, aëre et siccatione alterabilis < polymorphus v. obsoletus. Ovula fusca v. rubra, solitaria, aggregata, externa v. inclusa, et tetroidia v. antheridia et paranemata.

## *Ordo V. Fucales.*

Thallus globosus, filaris, laminaris v. caulescens, foliosus et ampullifer, olivaceus v. lutescens, siccatione nigrescens, cœrulescens, virens v. rubens. Ovula +— perfecta integra v. 2-8-partibilia, superficialia (an utriculi uniovulati?) v. inclusa c. paranematibus; antheridia spermozois plena, v. cryptæ paranemophoræ.

FAM. 15. ECTOCARPINÆ *nob.*

Thallus fulcro discoid. parvo v. stuposo adfixus, fusco-olivaceus, raro rubens v. lutescens, confervinus v. parenchy-

matic. teres aut subglobosus, cellulis quarund. discoideo-ordinatis. Ovula (an utriculi?) et antheridia? lateralia v. e paranematibus thallum parenchymatic. circumdantibus.

a. *Ectocarpeæ*: thallus confervinus ramosus, ovulis et antherid. lateralibus (paranemata goniophora quasi sola, thallo ad fulcrum reducto): — *Elachista*, *Ectocarpus*.

b. *Sphacelarieæ*: thallus polysiphonius, distiche v. verticillato-ramosus, cellulis plerumque discoideo-ordinatis et terminalib. in sphacelas abeuntibus, epi-meso-et endothallium ⊣— distincta; ovula et antheridia lateralia v. O: — *Ballia*, *Sphacelaria*, *Halopteris*, *Stypocaulon*, *Cladostephus*.

c. *Chordarieæ:* thallus subglobosus-minutus v. filaris, gelatinosus, paranematibus ovuliferis v. antheridiophoris obsitus. — *Corynophlœa*, *Leathesia*, *Myriocladia*, *Thorea*, *Mesogloea*, *Chordaria*, *Cladosiphon*.

d. *Chordeæ:* thallus fistulosus, coriaceus, paranematibus ovuliferis undique obsitus: — *Chorda*, *Spermatochnus*, *Halorhiza*.

FAM. 16. DICTYOTINÆ.

Algæ marinæ graciliores. Thallus olivaceus, laminaris, lineari-dichotomus, saccatus v. fistulosus, cellulis sæpe cubicis et intimis majoribus, radice stuposa. Ovula sorosa, rarius sparsa, et paranemata, passim antheridiomorpha.

a. *Encoelieæ*, cavæ: — *Dictyosiphon*, *Stictyosiphon*, *Striaria*, *Encoelium (Halodictyon)*.

b. *Dictyoteæ*, solidæ: — *Padinella*, *Phycolapathum*, *Phyllitis*, *Soranthera*, *Cuttleria*, *Halyseris*, *Stereocladon*, *Dictyota*, *Zonaria*, *Padina*. . .

FAM. 17. SPOROCHNINÆ *nob.*

Thallus fusco-olivaceus v. lutescens, siccat. nigrescens v. virens, filaris ramosus v. compressus lobatus, pinnatifid. et serrulatus, raro globosus, quibusd. axi articulato et cellulis mesothallii majorib. præditus, fulcro conico v. fibrilloso. Paranemata ovulifera interna v. externa, quibusd. sterilia et

caduca; antheridia? — Algæ marinæ, exclusa Lemanea — agriohydrica.

a. *Lemaneeæ*: filares, globosæ v. laminares; paranemata et ovula thallo v. goniangio inclusa: — *Lichina; Thamnocoelium, Lemanea.*

b. *Sporochneæ*: thallus filaris ramosus kionophorus v. laminaris; paranemata goniophora v. sterilia (caduca) externa, terminalia e capitulis ramulorum v. lateralia: — *Arthrocladia, Sporochnus, Carpomitra, Desmarestia (Desmia).*

FAM. 18. LAMINARINÆ.

Algæ maria frigidiora prædiligentes, passim giganteæ. Thallus olivaceus, radicosus, laminaris, stipitatus v. foliosus, passim ampullifer v. cribrosus, endothallio plerumque filari, mesothallio parenchymatico et lacunoso <, epithallio perenchymatico. Ovula -+— perfecta, aggregata, externa; paranemata simpl. v. antheridiomorpha, interna v. externa: — *Phloeorhiza, Capea, Laminaria, Hafgygia, Phycocastanum, Alaria, Ecklonia, Costaria, Agarum, Thalassiophyllum, Lessonia, Macrocystis, Nereocystis.*

FAM. 19. FUCINÆ.

Algæ marinæ cosmopolitæ, olivaceæ v. fuscescentes, siccatæ nigrescentes v. fusco-rubentes. Thallus coriaceus, basi scutulata, dichotomus, laminaris v. caulescens, ramosus, passim foliosus, ampullifer, cryptophorus v. gemmascens; cellulæ epithallii minimæ horizontales, mesothallii majores, globosæ v. oblongæ, endothallium fibrosum <, in synangiis et ampullis rarefactum. *Goniangia* (cryptæ goniophoræ, sori intrusi ostiolati) per omnem thallum dispersa, ad ramulos solitaria v. in synangiis -+— distinctis aggregata, bi-unisexualia, mon-dioeca, paranematibus simplicib. v. ramosis, ovula fusca integra v. 2-8-partibilia stipantibus, v. antheridia (vesiculæ spermozoophoræ lutescentes) fulcrantibus, plena.

a. *Fuceæ*: aphyllæ; goniangia per omn. thallum sparsa v. in synangiis -+— distinctis; ampullæ innatæ v. nullæ: —

*Myriadenia*, *Carpodesmia*, *Phyllospora*, *Hormophysa*? *Hormosira*, *Splachnidium*, *Himanthallia*, *Durvillæa*, *Fucus* (*Xiphophora*, *Carpoglossum*, *Pelvetia*, *Cymaduse*, *Ozothallia*).

b. *Cystosireæ*: caulescentes; ramosæ, aphyllae, v. foliis, partim in ampullas et synangia efformandis: — *Coccophora*, *Halerica* (et *Treptacantha* Kzg.), *Cystosira* (*Phyllacantha*, *Sirophysalis*), *Halidrys*.

c. *Sargasseæ*: foliis perfectioribus, synangiis et ampullis distinctis, axillarib. v. terminalibus: — *Turbinaria*, *Blossevillea*, *Sargassum* (Halochloa, Myagropsis, Spongiocarpus, Carpacanthus, Baccalaria et Decursaria), *Scytothallia*, *Sirococcus* (et Marginaria), *Carpophyllum*, *Phycobotrys*.

d. *Polyphaceæ*: thallus ramosus, filaris v. phyllomorphus, verrucis scabris stipitatis obsitus, in synangia terminalia v. lateralia, minuta, et ampullas sparsas efformandis: — *Castraltia* (*Scaberia*), *Polyphacum*.

## *Ordo VI. Floridales.*

Algæ marinæ rubentes, raro virentes, siccatione ±— alterabiles, graciles v. majores, thalli forma et fabrica interna summe variis, cellulis epithallii v. endothallii oomorphis quasi dioecæ. Ovula rubra (endothallina) in cavernulis v. cistulis passim placentiferis conferta aut favellæ. Tetroidia (epithallina) varia in epithallio, oocloniis v. nematheciis nidulantia.

### FAM. 20. CERAMIINÆ.

Algæ marinæ rubentes, heterogonio-dioecæ. Thallus ramosus monosiphonius (confervinus) v. polysiphonius, quibusdam compressus et pinnatifidus v. heterocladus, epithallio interrupto v. continuo, ±— crasso. Tetroidia gonoschiza sparsa. Favellæ hyalinæ, passim involucratæ, ovulis conglomeratis (spermatoidia Wrangeliæ): An Ordo proprius?

a. *Ceramieæ*: thallus confervinus, nudus v. epithallio interrupto v. continuo ±— crasso vestitus: *Callithamnion*,

*(Crouania)*, *Griffithsia*, *Halurus*, *Phlebothamnion*, *Hormoceras (Gongro-Echino-Acanthoceras)*, *Ceramium (Centroceras)*, *Wrangelia*, *Spirydia (Bindera)*.

*b. Ptilotecæ nob.* thallus compressus, gracilis, dichotomus v. bipinnatifidus, polysiphonius, epithallio perenchymatico; favellæ involucratæ; tetroidia apicalia: *Ptilota*, *Microcladia*.

c. *Heterocladieæ:* thallus ramosus, axi tubuloso phragmifero, mesothallio fibrilloso, epithallio perenchymatico, ramulis confervinis confertissimis, tetroidia occultantibus: *Heterocladia*, *Thamnocarpus* Harvey.

d. *Rhodoplexieæ:* thallus spongiosus, decomposite et subdichotomo lobatus, totus e catenulis reticulatis, extrorsum liberis et tetroidia gerentibus, constans: *Rhodoplexia*, *Dictyurus?*

FAM. 21. GIGARTININÆ *nob.*

(Periblasteæ Kzg. Cryptonemeæ I. Ag.<).

Algæ marinæ rubentes, siccatæ fuscesc. v. expallentes, thallo filari v. laminari, integro, dichotomo v. decomposite pinnato, solido, laxo v. cavo, endothallio filari reticulato v. parenchymatico mono-dimorpho, epithallio perenchymatico, sæpe catenulato. Cavernulæ ⊣— immersæ, ovulis glomeratis, v. cistulæ placentiferæ. Tetroidia varia, epithallio v. nematheciis immersa:

a. *Halymenieæ:* Thallus laminaris v. teres, lubricus, solidus, laxus v. cavus, e catenulis internis longitudinalibus et peripheriçis horizontalib. dichotomis conflatus, peridermide solida v. gelatinosa. Cavernulæ ovuligeræ ⊣— profundæ et quibusdam tetroidia globosa v. discoschiza intra catenulas thalli v. in oocloniis: — *Nemalion*, *Dudresnaya*, *Gymnophloea*, *Ginannia*, *Halymenia*, *Halarachnion*, *Dumontia*, *Catenella*.

b. *Caulacantheæ:* thallus filaris, ramosus, axifer, endonematicus; tetroidia globosa: — *Caulacanthus*, *Endocladia*, *Glojopeltis*..

c. *Ctenodonteæ* Montagne: thallus coccineus, expallens, filari-compressus, 2-4-pinnatisectus, axi filis curvatis, in cortice dichotomis et parenchymate subcorticali circumdato, synangia c. tetroidiis discoschizis et paranematibus v. cistulas (antheridia?) inter pinnulas gerens: — *Ctenodus.*

d. *Gelidieæ nob.:* thallus microcytus, compresso-linearis, pinnato-ramosus v. laminaris, endothallio filari amplo, mesoth. parenchymatico, epith. perenchymatico. *Ooclonia* cavernulas immersas v. tetroidia stauroschiza foventia. *Lenormandiæ* cistulæ majores aggregatæ, subapicales, nemathecio et placenta centrali plenæ; *Chætangio* synangia creberrima: — *Gelidium, Suhria; Lenormandia, Melanthalia; Chætangium, Sarcophycus?*

e. *Gigartineæ*: thallus laminaris v. filaris, dichotomus et decomposito-pinnatus, fusco-purpurascens <, epithallii catenulæ dichotomæ, horizontales, endothallium reticulatum perenchymaticum v. helminthocytum et mesothallio par-epenchymatico. *Cavernulæ* immersæ per omnem thallum v. exsertae ad marginem v. segmenta thalli. *Tetroidia* varia, sparsa, sorosa, v. in oocloniis et nematheciis: — *Iridæa, Grateloupia, Chondrus, Mastocarpus, Chondracanthus, Kallymenia, Constantinea, Sarcophyllis, Solieria, Gigartina.*

f. *Sphærococceæ nob.:* thallus filaris compressus, ramoso-pinnatus v. laminaris, passim costatus, carneo-roseo-atro-viridi-purpureus, sicc. alterabilis: parenchyma cellulis excentrice minoribus et perenchyma externum, rarius catenulatum. Cistulæ hemisphæricæ v. globosæ in pinnulis, ovula clavata et placenta cellulosa. Tetroidia disco-v. stauroschiza, rarius nemathecia: — *Delisea, Hypnœa, Cystoclonium, Rhynchococcus, Calliblepharis; Heringia? Sphærococcus (Gracilaria* et *Rodhymenia), Acropeltis, Trematococcus?*

g. *Tylocarpeæ nob.:* thallus filaris v. laminaris, dichotomus, quibusdam costatus et prolifer: parenchyma cellulis excentrice minoribus et perenchyma externum radians;

rum et inferum (radicem) concatenatæ: hic solidior, nodosus, nodis radiculas tubulosas penicillatas, graciles agentibus v. cellulis brevibus confertis obsitis (stelliger); ille fistuloso-articulatus, nudus v. catenulis gracilioribus consimilibus corticatus et passim carbonate calcis granuloso incrustatus. Rami ramulique (folia: Al. Braun) verticillati, cauli conformes, nudi v. ⊣— corticati, hi apice quibusdam bi-trifurci. *Ramenta* subulata, setiformia v. ellipsoidea, ad articulos caulis, ramorum et ramulorum verticillos ⊣— completos efficiunt (foliola: Al. Braun), nec non sparsa caulem asperum reddunt, ni deficiant. — *Organa propagationis* dimorpha intra furcas v. ramenta ramulorum, ad latus interius horum oriunda, mon-diœca, subsessilia: *spermocystæ* (antheridia, globuli rubri), novellæ virides, mox rubefactæ, e cellulis triangularibus dentatis 8 (6) compositæ et pedunculo brevissimo iustructæ, deciduæ: cellulæ hyalinæ, ad parietem internum strato tenui gonidiorum miniatorum mobilium coloratæ, fovent utriculos 8 centripetos gonidiophoros, cellulas dichotomo-ordinatas et fila confervina, spermozois spirilliformibus demum plena, fulcientes. *Oangia* drupacea, coronulata, solitaria, rarius conferta, e tubulis 5 viridibus, spiraliter tortis, semiduris, *ovulum* unicum, amylidiis majorib. et minoribus plenum, circumdantibus, constituta. Ovulum (an gemma?) germinans Charam prodit immediate. — Algæ enigmaticæ, Batrachospermo præprimis, nec non Ceramiinis, Sphacelariis et Confervinis quibusdam similes, sed majores et organa sexualia sui generis gerentes, nulli plantarum ordini affines, odore gravi hepatico insignes, ob succi gonidiophori motum, in cellulis magnis caulinis pellucidis facile observandum, celebratæ: — *Nitella*, *Chara*.

## Class. III. Polyparii.

Zoophyta marina, paucis agriohydricis, chaos quasi rerum naturalium repræsentantia, passim lapidescentia, more plan-

tarum (arborum) plerumque adfixa et continuo crescentia, nonnulla ad animalia magis vergentia, colore vario insignia, carbonate calcis (v. silicia) —+— farcta, plurima nonnisi in statu petrefacto nunc existentia, minima v. insulas totas, Australasiæ præprimis, innovatione continua efformantia, sæpius polypigera.

*Polypi* microscopici v. maximi (diametri pedalis) referunt saccum v. tubulum simplicem v. duplicatum, extensilem et contractilem, sæpe in discum superum ostiolatum v. mamillam et limbum planum v. reversum (pileum, pallium) productum — ac tentaculis simpl., tubulosis, pinnatis, ramosis, verrucosis, maximis v. minimis (nullis), torpidis v. sensibillimis obsitum. Saccus duplex in cloacam et cutem discedit: cloaca (ventriculus) quandoque minima, monostoma vescæ assumendæ et excernendæ ac ovulis v. pullis transmittendis æque inservit, in Flustrinis vero in tubum cibarium conduplicatum perfectum, ore et ano præditum (distomum) evolvitur. *Cutis* plerumque plicata inter lamellas internas organa sexualia condit, extus gemmas et stolones agit — et sæpius carbonatem calcis ad aciculos, receptacula polyporum v. axin thalli formanda secernit. Polypi Hydroideor. v. steriles? sunt v. genitalia externa gerunt. In quibusdam organa urticantia (vesiculæ pilum tortilem condentes), uncinuli, processus varii, epithelium micans, mucus phosphorescens, fibræ musculares, imo nervi? et oculi observantur. Respiratio aquea per canales varios et poros cutaneos absolvenda?

Multiplicantur polypi per *divisionem* spontaneam perfect. v. imperfectam, sæpius per *gemmas* superas, inferas v. laterales, ac stolones, prole solubili v. adhærente. Plurimi ovulis et spermocystis v. ovariis et testiculis præditi sunt, *sexu utroque* in eodem v. duobus individuis obvio; quidam *vivipari* sunt v. Medusas dejiciendas, organis sexualib. provisas producunt. Ovula vesiculam Purkinianam et Wagnerianam

notabilem gerunt; spermatozoa mobilissima, vermiformia v. cercarioidea, in aqua immutabilia; foecundatio in interaneis polypi v. in aqua absolvitur. Polypi mutilati et destructi facile regenerantur.

Polypi nudi variis corporibus adhærent v. receptaculo calcarco, corneo v. lapideo insident (adinstar pulli gallinacei, testæ ovi simili modo secretæ inclusi), solitarii, liberi, immediate conferruminati, cespitosi, ramosi v. thallo lapideo, corneo, carnoso, filari, plano, globoso v. frutescenti et radicanti, peculiari — ad leges proprias increscenti, v. e receptaculis confluentibus, sæpe effoetis et vacuis orto, adnati v. innati.

Trichophytis thallus fibrosus v. solidus passim articulatus, calce v. silicia prægnans, polypi veri nulli, sed ovula per aliquot horas-dies mobilia v. torpidiora, in muco superficiali nidulantia v. cistulae ovuligeræ, illis Algarum et Sertulariæ ac polypis Milleporinorum nonnullorum subanalogæ. Adusta odorem fere Alcyonii usti spargunt.

Polyparii numerosi a multis: Réaumur, Ellis, Pallas, Lamarck, Lamouroux, Schweigger, Quoy et Gaimard, Blainville, Ehrenberg, Rapp, Hassal, van Beneden, Milne-Edwards, Dana aliisque scrutati et coordinati sunt; natura tamen eorum procul dubio vegeto-animalis nondum rite determinata, evolutionis processus in paucis cognitus et genera variis auctoribus varia classificationem difficilem reddunt; liceat interim systematibus jam projectis sequens, in posterum rectificandum, substituere.

## *Ordo I. Trichophyta nob.*

(Pseudozoa et Amorphozoa Blainv.)

Thallus plocenchymaticus, spongiosus v. compactus e catenulis confervinis v. tubulis ramosis (vaucherinis) conflatus, novellus virens, rubens v. allochrous, demum carbonate calcis v. aciculis siliceis depositis rigescens, carnosus, su-

berosus, lignosus v. lapideus, moniliformis, fruticosus, reticulatus v. continuus et radicans. Ovula torpida v. mobilia in cistulis, cavernulis, epithallio v. muco superficiali nidulantia, v. ignota; antheridia inquirenda. An Algarum ordo VIII?

FAM. 1. CORALLININI.

Thallus moniliformis, di-trichotomus v. compactus et polymorphus, calce extus v. undique prægnans, rubens v. allochrous, e catenulis confervinis internis et externis variis-v. e parenchymate æquali (homæocyto) constans. Ovula v. tetroidia loxoschiza in cistulis terminalib. v. cavernulis immersis:

a. *Spongitei:* thallus calcareus polymorphus e cellulis conformibus; cavernulæ ovuliferæ immersæ: — *Melobesia*, *Spongites*, *Hildenbrandtia*.

b. *Corallinei:* thallus monilaris, di-trichotomus, epithallio calcareo, interrupto; endothallio e catenulis confervinis; cistulæ ovuliferæ terminales, ostiolatæ v. laterales: — *Amphiroa*, *Arthrocardia*, *Corallina*, *Iania*.

FAM. 2. GALAXAURINI *nob.*

Thallus virens v. rubens, demum calce ⊣— incrustatus, monosiphonius, utriculis ovuliferis confertis v. radiantibus coronatus, v. illis verticillatis et dichotomo-ordinatis ⊣— dense obsitus, — aliis e parenchymate heterocyto conflatus, ovulis periphericis v. ignotis:

a. *Polyphysei:* stipes confervinus, radiculosus; (ramulis verticillatis caducis) utriculi ovuliferi terminales, conferti v. radiantes: — *Polyphysa*, *Acetabularia*.

b. *Cymopolieі:* axis tubulosus, articulatus, cellulæ periphericæ verticillatæ, di-trichotomo-ordinatæ, ⊣— compactæ; ovula solitaria inter cellulas externas v. ignota: — *Dasycladus*, *Neomeris*, *Cymopolia*.

c. *Galaxaurei:* fruticulosi, dichotomo-ramosi, parenchymate endothallii e cellulis majoribus et minoribus interjectis confecto, cellulis periphericis dichotomo-ordinatis, ovuliferis: — *Galaxaura*, *Actinotrichia*, *Liagora*.

d. *Halysicei:* thallus monilaris, dichotomus, epithallio microcyto, mesothallio macrocyto, endothallio amplo e catenulis tenerrimis, raris; ovula?: — *Halysium.*

FAM. 3. HALIMEDINI.

Thallus monilaris, novell. virens, demum calce incrustatus, articulis sæpius compressis, latis, dichotomo-concatenatis, omnis e tubulis continuis, excentrice ramosissimis v. superis dichotomo-concatenatis confectus; ovula peripherica?: — *Halimeda, Udotea, Avrainvillea, Corallocephalus (Chamædoris* et *Espera).*

FAM. 4. SPONGIINI *nob.* (Amorphozoa Blainv.)

Thallus continuus polymorphus, cavus, lacunosus v. porosus, plus minus elasticus, aquam bibens et projiciens <, rarius e gelina sola solidescente grumosa constans, sæpius e tubulis corneis ramosis, reticulatis, implicatis (fibræ, plocenchyma) et gelina obductis — v. ex aciculis siliceis v. calcareis variis aut granulis, ope materiæ animalis coadunatis confectus. Gemmulæ v. ovula (mobilissima? pulli ciliati?) in lacunis gelinosis pronata et projecta in prolem novam evolvi visa; ovula dimorpha Spongillæ.

Spongiæ marinæ et quædam agriohydricæ, nunc vigentes et fossiles, perquam numerosæ, a physiographis priscis et neotericis: Donati, Ellis, Pallas, Cavolini, Montagu, Lamouroux, Lamarck, Schweigger, Goldfuss, Gray, Grant, Milne-Edwards, Laurent, Dujardin, Bowerbank, Hogg, Johnston, Nardo etc. scrutatæ sunt, quin tamen natura earum rite dilucidata fuerit. Chemice serico, pilis v. vasis capillaribus subanalogæ, habitu et textura Codio, Halimedæ et Xeniophytis proximæ; lacunæ ovuliferæ quasi polypi amorphi? Adaptavimus genera a Cel. Nardo stabilita, quorum nomina plura, plantis propria, mutanda erunt; addidimus gen. dubia ad calcem.

Trib. I. *Halisarce nob.*: spongiæ subcarnosæ, e ge-

lina grumosa constantes, absque aciculis silic. v. calcareis: — *Chondrosia*, *Halisarca*.

Tr. 2. *Spongiei:* e plocenchymate corneo gelinoso constantes, absque aciculis: — *Spongia*, *Spongelia*, *Velaria*, *Aplysina*, *Gorgonida*, *Hircinia*.

Tr. 3. *Siliciferi*: spongiæ ex aciculis variis v. granulis siliceis, ope materiæ animalis coadunatis compositæ, admixto plocenchymate in quibusdam: — *Granta*, *Schweiggera;* — *Raspaila*, *Flemmingia*, *Graya*, *Reniera*, *Spongilla*, *Vioa*, *Suburites*, *Donatia*, *Tethya*, *Lyncuria*, *Lithomena*, *Esperia*, *Areola*, *Pachymatisma*.

Tr. 4. *Calciferi:* spongiæ ex aciculis v. granulis calcareis et materia animali confectæ, admixto plocenchym. in quibusdam: — *Leuconia; Milnea*.

Genera scrutanda: *Thaumasia*, *Alcyoncellum*, *Geodia*, *Dysidea*, *Coeloptychum*, *Siphonia*, *Myrmecium*, *Eudea*, *Halirhoa*, *Hippalimus*, *Cnemidium*, *Lymnorea*, *Chenendopora*, *Tragos*, *Manon*, *Ierea etc.*

## *Ordo II. Xeniophyta nob.*

Thallus e tubulis polypiferis simpl., ramosis v. transverse septatis confectus, carnosus, suberosus, tuberosus, laminaris, filaris v. fruticosus, homogeneus v. in axin ⊣— durum, corneum v. lapideum et corticem mollem discedens. Granula v. aciculi calcarei, raro silicei, in cortice sparsi, in axi ⊣— conferruminati. Polypi ovi- et gemmipari, ⊣— retractiles, tentaculis octonis pinnatis v. papillosis. Vid. Nardo *Distribut. naturali — della classe de Zoofitari, in Nuovi Annali delle Sc. naturali, Bologna*, 1845.

### FAM. 5. ALCYONINI *nob.*

Thallus tubuloso-carnosus, simpl. lobatus v. ramosus, elatus v. prostratus, membranaceus v. filaris, homogen. v. axi imperfecto præditus, aciculis calcareis <. sparsis v. in axi confertis. Polypi 8-actinii ⊣— retractiles: — *Xenia*, *Am-*

*mothoea, Nephthya; — Anthelia, Exos, Alcyonidia; Alcyonium, Lobularia, Sympodium, Dendridium, Asbestia; — Briareum; Spoggodia.*

FAM. 6. PENNATULINI.

Stipes limo insertus, simpl. clavatus v. gracilis et longissimus, aut pinnatus v. in thallum planum una superficie polypiferum dilatatus, axi corneo v. lapideo ⊣— distincto, et tubulis 2-4 percursus, muco quibusdam phosphorescente obductus. Polypi extensiles, sparsi, ad ramos seriati v. umbellati, tentaculis 8 (6) pinnatis: — *Renilla, Veretillum; Scirpearia, Pavonaria, Virgularia; Pennatula, Umbellularia.*

FAM. 7. GORGONIMI.

Thallus fruticosus v. arborescens, basi ⊣— effusa adfixus, axi corneo v. lapideo, cortice molli, intus tubulifero, extus polypigero et aciculis calcareis latentib. v. exsertis referto. Polypi ovi- et gemmipari, in cortice nidulantes, retractiles, tentaculis 8 pinnatis. < (*Antipathes* an his affinis?).

a. *Gorgoniei*, axi corneo: — *Prymnoa, Muricea, Plexaura, Bebryce, Funiculina, Placomus, Eunicea, Pterogorgia, Gorgonia.*

b. *Isidei*, axi lapideo v. semicorneo: — *Mopsea, Isis, Melitea; Corallium.*

FAM. 8. TUBIPORINI.

Tubuli polypiferi calcarei v. cornei subdiscreti, laminis horizontalib. intercepti. Polypi octactinii retractiles. Thallus e tubulis polypor. extinctorum, strata plura formantibus, innovandus subglobosus v. O: — *Tubipora, Syringopora? Cornularia, Telesto?*

## *Ordo III. Anthozoa.*

Polypi maximi v. minuti, sæpe cloaca monostoma, cute plicata et in lacunis organa sexualia fovente præditi, ovipari, vivipari, sed sæpius per gemmas superas, inferas v. laterales, stolones v. divisionem perfect. v. imperfectam multi-

plicati, hinc solitarii, discreti, inter se connati (polystomi) v. ope limbi confluentes. E disco supero ostiolato, in limbum -+— producto, prodeunt *tentacula* brevissima verruciformia v. elongata tubulosa et acropora, rarius ramosa, validissima, papillosa v. uncinulata, definita (6 v. 12) v. indefinita, ni deficiant. Secretum cutis calcareum, ut in ovo avium (corallum Dana), in receptacula lamellosa < concava v. convexa, singula v. polypis connatis communia et gyrosa figuratur, quæ denique conferruminata, effoeta v. obliterata, thallum solidum, porosum v. lacunosum, -+— distinctum et innovandum effingunt, ni polypi solitarii et nudi sint.

FAM. 9. MADREPORINI.

Thallus calcareus, passim porosus, e tubulis polypiferis continuis, septatis v. obliteratis confectus, frutescens, tuberosus v. laminaris, prostratus v. adsurgens. Receptacula parva -+— profunda et exserta, lamellosa v. lævia; polypi exiles, discreti v. confluentes, -+— plicati, tentaculis definitis, 12 v. 6, monocyclis v. pluribus aut nullis. (Poritidei, Favositidei, Milleporei et Madreporei): — *Porites*, *Goniopora*, *Alveopora*; — *Sideropora*; *Seriatopora*, *Pocilopora*, *Stenopora*, *Constellaria*, *Favosites*, *Catenipora*; — *Heliopora*, *Heliolites*, *Millepora*; — *Manopora*, *Madrepora*.

FAM. 10. ASTRÆINI.

Polypi plicati, sæpe magni, tentaculis tubulosis indefinitis, sparsis v. polycyclis prædíti, ore sæpe verrucoso, solitarii, ovipari v. gemmatione supera et divisione perf. v. imperfecta multiplicati, discreti, connati (polystomi) v. limborum ope confluentes. Receptacula calcarea multilamellosa, solitaria, limbo obducta, singula v. communia (potyp. connatis), cæspitosa v. in thallum laminarem, globosum, strato polyporum novello obvolutum, rarius frutescent aggregata:

a. *Astræei*: polypi conferti, discreti v. seriatim confluentes, tentac. marginal.; receptacula concava v. convexa: — *Euphyllia*, *Ctenophyllia*, *Mussa*, *Manicina*, *Caulastræa*,

*Tridacophyllia, Astræa, Meandrina, Monticularia, Phyllastræa, Merulina, Echinopora.*

b. *Fungiei:* polypi fere discoidei, solitarii v. aggregati et confluentes, tentaculis sparsis v. obsoletis: — *Psammocora, Agaricia, Pavonia, Zoopilus, Polyphyllia, Halomitra, Herpetolithus, Cyclolitas, Fungia.*

FAM. 11. CYATHOPHYLLIINI *nob.* (Caryophyllacea Dana).

Polypi plicati, sæpe magni, quandoque nudi, tentacul. tubulosis, indefinitis, polycyclis præditi, solitarii, ovipari v. gemmatione infera aut laterali, rarius divisione imperfecta multiplicati. Receptacula calcarea, multilamellosa, teretia, obconica, concava v. convexa, solitaria, cespitosa v. in thallum cupularem, globosum, v. frutescentem aggregata, ni polypi nudi sint:

a. *Cyathophyllei:* receptacula calcarea, lamellis pinnatis: — *Cyathophyllum, Amplexus, Caninia, Arachnophyllum, Acervularia, Cystiophyllum;* — *Clisiophyllum, Michelinia, Columnaria, Sarcinula....*

b. *Anthophyllei:* receptac. calcarea, lamellis fere integris: — *Ecmesus, Cyathina, Turbinolia, Desmophyllum, Culicia, Caryophyllia, Oculina, Anthophyllum, Stylina.... Gemmipora..*

c. *Zoanthei:* polypi nudi coriacei, sæpius stolonibus tubulosis et ramosis conjuncti v. in thallo laminari aggregati; cloaca minima; an sequentib. affiniores?: — *Zoanthus, Polythoa, Hughea, Mamillifera....*

FAM. 12. ACTININI.

Polypi nudi, carnosi, solitarii, vivipari, vix gemmipari, colore vario insignes, parvi v. maximi, basi discoidea sessiles et repentes v. decidui, nec natantes. Tentacula e disco supero ostiolato, tubulosa, acropora, —+— contractilia, indefinita, c. ætate numero aucta, minuta v. validissima, simpl. v. polymorpha et passim verrucis suctoriis obsessa. Cutis musculosa contractilis, extus sæpe porosa, intus multilamellata

et in lacunis ovula grossa v. testiculos fovens; oviductus ad lamellas decurrentes et in basi cloacæ hiantes transmittunt ovula, inrta cloacam evolvenda in pullos, ore eructandos: — *Actinia*, *Anthea*, *Edwardsia*, *Ilyanthus*, *Capnea*, *Actinodendrum*, *Lucernaria*, *Metridium*, *Heterodactyla*, *Epicladia*. . . . .

## *Ordo IV. Hydroidea* Dana.

Polypi minuti, anomalactinii (tentacul. 2-20), simplices, monostomi, genitalib. externis, aut steriles et cistulis ovuligeris separatis aucti, solitarii, v. ramosi, nudi v. e tubulis medullosis pronati. Thallus quorundum Medusas dejiciendas producit.

FAM. 13. TUBULARINI *nob.*

Polypi tubulosi v. clavati (Hermiæ solidi? Eleutheriæ oculati) nudi v. tubulis corneis, passim laryngoideis innati, et sponte solubiles v. adnati, cæspitosi et gemmascendo ramosi. Tentacula numero varia, teretia, +— longa, passim ciliata v. uncinulata, coronantia, ad clavulam sparsa v. demissa. Ovula 1-∞-vitellina, externa sub tentaculis v. inter illa — et spermocystæ ibidem, ni Medusarum quasi mycelia sistant: — *Eleutheria*, *Hydractinia*, *Hydra*, *Coryne*, *Hermia*, *Syncoryna*, *Stauridium*, *Tubularia*, *Eudendrium*, *Pennaria* (Gołdfuss)..

FAM. 14. SERTULARINI.

Tubuli cornei, radiculosi, massa molli farcti, fruticulosi, ramis sparsis, pinnatis v. verticillatis, cellis vacuis obsiti et polypos e massa molli anomalactinios, calyculatos, terminales v. laterales, ac cistulas ovuligeras separatas, laterales, sessiles v. pedunculatas producentes, ni medusas dejiciendas progenerant: — *Campanularia*, *Laomedea*; — *Antennularia*, *Plumularia*, *Sertularia*, *Thujaria*, *Thoa*, *Pasythea*. . .

## *Ordo V. Bryozoa.*

Polypi minuti, ascidioidei, tubo cibario perfecto et genitalib. internis præditi, receptacula immediate connata v. stolonib. tubulosis aut thallo vario suffulta.

FAM. 15. FLUSTRINI.

Receptacula ovata v. tubulosa, simpl. v. tympano, operculo et processubus variis prædita, mollia, cornea v. calcarea, minuta, immediate connata (stolones obsoleti), in stirpem crustaceam, laminarem v. frutescentem, corneam v. lapideam confluentia; aliis stolones tubulosi, gemmascentes, passim ramosi et articulati in thallum confervinum exsurgunt v. plures in truncum ramosissim. coalescunt. Polypi ovi - v. gemmipari, tubo cibario perfecto, conduplicato, ore et ano approximatis, tentaculis 8-30, teret., passim ciliatis et in coronam connatis; hermaphroditi; ovula in cavo receptaculi spermatozois fæcundata, per orificia distincta sub basi tentaculor. emittenda. — Nunc viventes v. fossiles:

a. *Cristatellei*: receptac. simpl. mollia, tubulosa v. ovata, immediate aggregata, natantia, v. stolonib. affixa (polypus duplex ex ovo Alcyonellæ): — *Cristatella*, *Alcyonella*... *Plumatella*, *Halodactylus?*

b. *Valkerieі:* receptac. mollia v. cornea, stolonib. tubulosis solitariis v. pluribus, in truncum ramosissim. connatis, adhærentia, passim decidua: — *Vesicularia*, *Serialaria*, *Valkeria*, *Bowerbankia*, *Laguncula*, *Pedicellina*, *Anguinella*, *Anguinaria*, *Dedalœa?*..

c. *Crisiei:* recept. cornea v. lapidea, gemmatione supera in stirpem confervinam, ramosam, cæspitosam v. in reticulum concatenata, ore subterminali: — *Crisia*, *Notamia*, *Hippothoa*, *Alecto*, *Tibiana*, *Aulopora*....

d. *Tubuliporei:* recept. tubulosa, simpl., cornea, thallo calcareo adnata: — *Tubulipora*, *Discopora* et affin.

e. *Celleporei:* receptac. cornea v. lapidea, utricularia, ovata v. angulata, sæpius operculata, variis processubus armata et in quincuncem disposita, connata in crustam, laminas v. stirpem polymorpham, thallo —— distincto: —

*Cellepora*, *Membranipora*, *Flustra*, *Acamarchis*, *Scrupocellaria*, *Cellaria*, *Eschara*, *Retepora*, *Adeona*; — *Myriozoon*?

*Nota Myriozoon* an familia propria? — *Antipathes* et *Savalia*, thallo corneo fruticoso, cortice tenui polypifero, evanido, tentac. 6-16, an Bryozois an potius Gorgoninis affines? — *Mollusca Tunicata* hic collocanda, Bryozois et Acalephis intermedia?, et majora, solitaria se haberent ad Flustram, ut Actiniae ad Milleporam?

## Class. IV. Acalephæ.

Zoophyta marina, eminenter animalia, microscopica v. maxima, more plantarum annuarum qualibet æstate reproductiva (?), varias metamorphoses et organorum successivam evolutionem peragentia, novella adfixa (an omnia?), adultiora libere natantia, e cellulis, sæpe polyëdricis, gelatinosis v. aquosis constituta, tenerrima, extra aquam marinam mox deliquescentia v. solidiora, raro testa interna cartilaginea v. calcarea, cellulosa prædita, hyalina vel coloribus cœruleo, roseo, violaceo, coccineo, luteo, fusco, viridi aliisque tincta, contractilitate et motu ⊣— activo, voluntario v. passivo, gaudentia, organorum numero quaternario, simpl., dimidiato v. multiplicato, rarius vago, insignia.

Corpus simplex: globosum, ellipsoideum v. formam ovi, disci, pilei, fungi, bursæ, campanæ aliasque præ se ferens, motu alterabile, solidum v. cavum, organis internis, externis et processubus variis, brachiis, alis, tentaculis etc. præditum, aliis compositum — e tubulis passim rhizoideis (siphones), haustoriis, hirudines simulantibus, phyllodiis ⊣— crassis, varie confertis, polymorphis, sæpe caducissimis et vivacibus, solidis v. lacuniferis, ovariis, testiculis, et ampullis v. vesicis natatoriis. Organa soluta ac partes resectæ majores, haud regenerandæ, vivacitatem diu manifestant.

Acalephæ, cloaca centrali (ventriculo?) parva v. maxima cum hiatu unico v. antico et postico, simpl. v. in saccos peripherícos divisa, præditæ, varia animalia: pisces, crustacea, mollusca digerunt et reliquias ore v. hiatu opposito eructant;

cloaca hæc ovula quoque et spermatozoa transmittit (?), nec non vices cordis, pulmonis et vesicæ natatoriæ explere videtur, imo habitaculum crustaceis parasitantibus præbet (Polyxenia). Plurimæ, cloaca destitutæ v. illa clausa præditæ vescam fluidam, animalculis præguantem, ex aqua marina v. animalibus variis marinis, ope tentaculorum veneniferorum torpefactis, apparatu tubuloso vario, adinstar radicum v. hirudinum sugunt, chylo granuloso per tubulos internos et venulas? ad omnia corporis organa deferendo. Motus alacris v. lentus variarum Acalepharum absolvitur pileo contractili, ab aqua marina irritato, in dulci inerti (*), adinstar cordis v. uteri parturientis activo et aquam protrudente; in Ctenophoris lamellæ exiguæ vibrantes ac coloribus iridis ludentes, adinstar remigum coagunt; submersio et emersio ope ampullarum per vices turgentium et collabentium, nec non alis demissis v. erectis perficitur; locomotivitas inertium vento et undis secundatur. Multiplicantur per ovula, spermatozois et in aqua activis fœcundata; divisio et gemmatio modo pullis propria.

Multis Acalephis noduli marginales 8 (v. 16) cum puncto rubro (oculi?) et crystallis calcareis, aliique alterni cupulares

*) *Cyanaea Lamarckii*, cujus exemplaria permulta, inertia et viva in mari, Bononiam alluente, mihi observare licuit, in aqua marina, vitro contenta et aqua dulci diluta, mox torpebat; mobilitas interim cito restituta erat et len. tissima per diem, quousque observare licuit, durabat; ergo alacritas motus a salis quantitate dependet, aqua dulci subito annihilanda?. Eaedem Acalephae mortuae, longius asservatae, odorem tetrum piscinum et Chenopodii Vulvariae spargebant. Similia in Acalephis maris mediterranei observari, Rhizostoma vero cultro scissum vix sensibile apparuit. *Ocyroë* (Metropsis) *maculata* Rangii exacte uterum ejusque ligamenta lata repraesentat, processus subalares 4? ligamenta rotunda uteri, maculae alarum — ovariorum loca designant; in *Cydippe* ligam. lata c. corpore conferruminata, in Medusinis in pileum efformata sunt. His multisque aliis facile rectificatur comparatio Acalephae c. systemate uterino, quam in Tetract. naturae, 1843, pag. 17, annuntiavimus, prolificationem insolitam. Aureliae et Cyaneae ibidem exponentes. Vid. et Dujardin, Mém. sur le developem. des Meduses etc., in Ann. Sc. natur. 1845. Novemb.

(anales? 8, Ehrenberg). Nodulus similis ocularis *Lesueuriæ?* — Pluribus organa urticantia (vesiculæ, pilos ejaculatorios foventes, cupulæ veneniferæ aliaque) pileo et tentaculis insita, — et phosphorescentia eximia, an secreto peculiari producta?, fibræ musculares tentaculorum et pilei, epithelium micans, nec non nervi in quibusdam demonstrati, ab aliis denegati, novo egentes examine. Organa respirationis?.

Species Acalepharum ultra 450 notæ, a Cl. Lesson ad ordines 8, familias plures et genera 135 redactæ sunt, 1843. Genera hæc partim superflua, ab individuis juvenilib. desumpta v. inexacte definita, dubiis quibusdam ommissis et nominibus necessariis (nec omnibus) substitutis, varios auctores consulentes, ad ordines naturales 4 et familias 16 sic reducere curavimus.

## *Ordo I. Arthrosomæ* nob.

(Siphonophoræ Eschscholtz, excl. Endochondris).

Acalephæ motu activo v. passivo gaudentes, minimæ v. majores, passim asymmetricæ. Sipho (axis tubulosus) simplex v. ramosus, rhizoideus, longus v. ad punctum centrale reductus; illi annexa sunt haustoria hirudinea, solitaria v. plura, varie disposita, ovaria lutea fasciculata v. ad basim haustorii conferta, et tentacula gracillima, tortilia et valde contractilia, v. longa, quibusdam pluriorgyalia et glandulis veneniferis obsita. Plurimis organa peculiaria (phyllodia, bracteæ, cuculli, chondrophyses) crystallina, hyalina, polymorpha, solida v. lacunifera siphoni annexa, ictu lenissimo mox dilabentia, vivacia, nec coadunanda, et ampulla aërea terminalis parva v. maxima.

### FAM. 1. DIPHYINÆ.

Acalephæ exiguæ v. corpore bipollicari. Cucullus (*Saugröhrenstück*) in acalepha natante anticus, polymorphus, passim lacuna præditus, chondrophysin (*Schwimmhöhlenstück*),

parvam v. multo majorem, haustorium solitarium et genitalia fovens, vel siphonem rhizoideum, ramosum, —+— longum exerens, cui haustoria plura, alterna, ovariis et tentaculis tortilibus concomitata et quibusdam bracteata, adnexa sunt. Hydrocystis generalis ad basin siphonis intra cucullum — et partiales ad tentacula, cum fluido, ad hæc organa turgefacienda inserviente.

a. *Monogastricæ:* haustorium unicum; sipho nullus: — *Noctiluca? Eudoxia, Ersœa, Aglaisma.*

b. *Polygastricæ* Lesson: sipho exsertus, ramosus, cum haustoriis et tentaculis pluribus, nudis v. bracteatis: — *Abyla (Calpe, Rosacea, Heterodiphyes), Diphyes..*

FAM. 2. POLYTOMINÆ *nob.*

Acalephæ sæpius strobiliformes, hyalinæ v. coloratæ, siphone axili, quibusdam longissimo, phyllodiis crystalloideis v. polymorphis, multis, dense imbricatis v. dissitis, mobilibus et caducis, vivacibus. Haustoria, ovaria et tentacula (dum adsunt) terminalia v axillaria: — *Plethosoma, Polytomus, Hippopodius, Stephanomia, Epibulia, (Sarcoconus* Less.)...

FAM. 3. PHYSOPHORINÆ *nob.*

Acalephæ hyalinæ v. polychroæ, ampulla terminali parva ostiolata, deorsum in siphonem brevissimum v. elongatum producta, cui adnexa sunt phyllodia varia, solida v. lacunifera, verticillata, disticha v. sparsa, haustoria hirudinea, ovaria et tentacula, sæpius ramosa.

a. *Athorybieæ*: subglobosæ, siphone brevissimo, phyllodiis deorsum verticillatis, pendulis, solidis: — *Athorybia, Anthophysa.*

b. *Physophoreæ:* sipho elongatus, inferne dilatatus, phyllodia lacunifera, discticha, supera; haustoria, ovaria et tentacula infera: — *Physophora.*

c. *Agalmeæ*: strobiliformes, phyllodiis superiorib. distichis, confertis, lacuniferis, inferiorib. solidis imbricatis; haustoria, ovaria et tentac. infera: — *Agalma.*

d. *Apolemieæ:* sipho acrophysus, circumdatus ampullis elongatis et globosis, haustoriis, tentaculis cirrhosis — ac ovariis v. testiculis: — *Apolemia*, *Apolemiopsis*.

FAM. 4. PHYSALINÆ.

Acalephæ sæpius coloratæ et majores: vesica pyriformis, depressa, hemisphærica-mamillata, v. subcompressa et cristata, inferne haustoria hirudinea plura, tentacula varia, sæpe longissima gerens — vel in siphonem ramosum deorsum producta, cui adhærent ovaria fasciculata:

a. *Rhizophyseæ:* ampulla pyriformis, sipho rhizoideus, ramosus, ovariis et tentaculis sparsis, v. brevissimus — ovariis et tentaculis verticillatis: — *Rhizophysa*, *Brachysome*.

b. *Discolabeæ:* vesica depressa, siphonem centralem, tentacula et ovaria demittens: — *Discolabe*, *Diphysa*.

c. *Angeleæ:* vesica hemisphærica ampla, mamillata, haustoria hirudinea et tentacula 8 longa ramosa demittens: — *Angela*.

d. *Physalieæ*: vesica magna, transversim elongata, rostellata, cristâ membranacea, lacunosa erectili prædita, disco infero vasculoso et carnoso, haustoria ∞ hirudinea, tentacula longissima (quibusdam 2-4-orgyalia), cupulis venceniferis munita, valde contractilia, aliaque graciliora (branchialia) demittens: — *Physalia*, *Alophota*?

## *Ordo II. Endochondrae* nob.

(Medusæ chondrophoræ Eysenhardt).

Acalephæ exiguæ v. 4-pollicares, motu passivo? gaudentes, vix urentes. Testa cartilag. v. calcarea, e cellulis aëriferis, radiatim v. arcuatim dispositis constructa, depressa, orbicularis v. rhomboidea et in cristam diagonalem elevata, rarius compressa v. subglobosa, intra membranam, quæ in limbum crassiorem et discum inferum carnosum efformatur. Haustoria tentacularia prehensilia (tentacula brevia tubulosa ostiolata), sublimbaria, pauca v. plurima, et interiora minora, clo-

acam centralem, sæpius lageniformem, circumdantia, organis sexualibus (testicul. et ovariis?) interjectis.

FAM. 5. VELELLINÆ.

Testa horizontalis oblique quadrata, limbo diagonaliter imposita et in cristam diagonalem cartilagineam elevata; haustoria exteriora et interiora copiosa, simplicia. *Ratariæ* testa verticalis compressa, crista verticali contractili musculosa amicta, haustoria (tentacula?) marginalia pauca (8-18): — *Velella*, *Rataria*.

FAM. 6. PORPITINÆ.

Testa calcarea < orbicularis v. subglobosa, radiato-septata, limbo circulari; tentacula peripherica +— copisa, passim clavata et glandulis pedicellatis v. sessilibus obsita: — *Ratis*, *Acies*, *Porpita*.

## *Ordo III. Cybophorae* s. *Pileiferae* nob.

(Discophoræ Eschscholtz, Schirmquallen Brandt).

Acalephæ minimæ et maximæ (ad 50 libras ponderosæ), sæpe agaricos æmulantes, colorib. variis et organorum radiantium dispositione regulari excellentes, numero quaternario simpl., duplici, triplici v. octies, sedecies et magis multiplicato, raro impari, 7, 9 aliove; sexu distinctæ. Corpus discoideum, subglobosum v. in pileum (discus, *ombrelle*, *Schirm*), more fungorum, convexo-concavum, conicum, subglobosum, elongatum, pyramidalem, excipuliformem aliasque formas, passim alterabiles, præ se ferentem, efformatum, cuticula tenerrima v. crassiori et papillosa, margine integerrimo v. regulariter lobato, tentacula nulla, pauca v. numerosa, brevissima v. longissima, uni-pluriserialia, passim difformia, +— contractilia, tubulosa, basi v. longitrorsum glandulosa gerente. Pileus, adinstar cordis v. uteri parturientis contractilis, mobilitatem acalephæ continuam producit et passim fibris muscularibus +— manifestis ac nodulis marginalib. vaginatis 8 v. 16 provisus est: noduli punctis rubris superis no-

tati et passim crystallophori — qua oculigeri, ac simpliciores alterni — qua excretorii v. anales ab Ehrenbergio censentur. Cloaca centralis (ventriculus?) maxima, minima v. nulla, clausa v. inferne hians, ore parvo v. maximo, simplex v. in saccos 4-32 aut tubulos plures divisa, sæpe producta in proboscidem exsertam v. pileo inclusam, solidam, fistulosam v. in brachia 4-plura, polymorpha, simpl. v. ramosa, quandoque condylomatosa partitam. Cybophoræ, cloaca hiante (et brachiata) præditæ, animalia marina varia, nec non pisces, passim ope pilorum ejaculatoriorum capsularium urentium stupefactos, digerunt et reliquias ore excernunt, chylo per tubulos corporis deferendo; vesca Astomarum vero fluida per haustoria parva et tubulos proboscidis v. brachiorum fertur ad cloacam clausam (si adest), intrat tubulos (vasa) pilei quaternos v. plures, simpl. v. ramificatos et in tubulum circularem marginalem confluentes <; a chylo, globulos oscillantes vehente, affluente v. regurgitante tentacula marginalia +— turgent. Ovaria saccato-gyrosa v. taeniæformia aut testiculi consimiles, 4-8-72, inter appendices cloacæ radiatim disposita, in cloacam v. spiracula valvata externa (Rhizostoma etc.) hiantia, in cryptocarpis vix notabilia. Prolificationis processus singularis in Aurelia et Cyanea a Sarsio observatus, in Tetractyde Naturæ (1845, p. 17) a nobis concinnatus: ovulum singulum in bursulis brachiorum maturandum et verosimiliter in aqua fœcundandum, varias metamorphoses et organorum evolutionem successivam peragit, antequam in acalephas perfectas plures (14) evolvatur. Species ultra 250 notæ, generib. dubiis omissis, sic in familias 6 disponuntur.

FAM. 7. EUDORINÆ *nob.*

Acalephæ cryptocarpæ (microgoniæ), simplicissimæ, discoideæ; subglobosæ v. concavæ, tubulis cruciatis +— ramificatis, chylum et bullas aëreas (?) vehentibus, haustoriis minimis v. elongatis ad tubulos pinnatis; tentacula margina-

lia brevia, longissima v. nulla; cloaca et os nulla? ni superficie pilei infera omni resarcita: — *Eudora* (Discus), *Berenix*, *Staurophora*, *Carybdea*....

FAM. 8. AEQUOREINÆ.

Acalephæ cryptocarpæ <, discoideæ v. campanulatæ et lobatæ, parvæ v. majores; cloaca magna late hians, passim ciliata, tubulos radiantes densos emittens v. in saccos divisa; tentacula brevia ∞ v. longiora, sæpe inter saccos cloacæ v. ex iis orta: — *Aegina*, *Aeginopsis*, *Cunina*; — *Foveolia*, *Pegasia*, *Eulimenes*, *Polyxenia*, *Aequorea*, *Stomobrachium*, *Mesonema*...

FAM. 9. MEDUSINÆ.

Acalephæ phanerocarpæ (macrogoniæ), pileo sæpius discoideo, convexo et lobato, cloaca minori, in tubulos ramificatos v. saccos abeunte, ore in brachia 4 +— longa et robusta producto, raro simplici. Tentacula e margine v. superficie infera pilei, passim fasciculata, raro o. Multis cava sexualia 4 et noduli marginales 8 v. 16: — *Phorcynia*, *Ephyra*, *Biblis*? *Melitea*? *Evagora*, *Phacelophora*, *Callirhoë*, *Sthenonia*, *Aurelia*, *Claustra*, *Cyanea*, *Cyaneopsis*, *Pelagia*, *Chrysoara*.

FAM. 10. OCEANINÆ.

Acalephæ crypto-v. phanerocarpæ, pileo sæpius campanulato, conico v. ampullaceo, cloaca minori lobata, proboscide fistulosa, apice lobulata et pileo inclusa <; ovaria alterna, tubuli chyliferi 4 v. plures, intra pileum descendentes; tentacula ∞, pauca, fasciculata v. o: — *Marsupialis*, *Campanella*, *Hippocrene*, *Proboscidactyla*, *Melicertum*, *Aglaura*, *Laodicea*, *Microstoma*, *Turris*, *Circe*, *Conis*, *Tholus*, *Pandea*, *Oceania*, *Patera*, *Taumanthias*.

FAM. 11. GERYONINÆ (Meduses agaricines Lesson.).

Acalephæ cryptocarpæ, agaricoideæ, astomæ, proboscide solida, simplici v. apice lobulata, pileo conico v. campanulato, cloaca centrali clausa, sæpius in saccos 4-6-plures v. in tubulos soluta; tentacula marginalia <, e saccis v. inter-

eos orta, ⊣— numerosa v. nulla: — *Geryonia*, *Dianœa*, *Orythia*, *Tima*, *Eirene*, *Saphenia*, *Linuche*, *Lymnorea*? *Favonia*. . . .

FAM. 12. RHIZOSTOMINÆ.

Acalephæ phanerocarpæ, mediæ et maximæ, pileo hemisphærico, ore centrali o, cloacæ saccis c. ovariis (v. testiculis) 4-8 alternantibus; brachia 4-8 simpl. gracilia v. maxima et ramosissima, vescam fluidam per haustoria ∞ et tubulos internos ad cloacam vehentia; ad basin brachiorum spiracula valvata, ad genitalia et cloacam ducentia: — *Ocyroë* (Peron), *Cephea*, *Cassiopea*, *Rhizostoma*.

## *Ordo IV. Ctenophorae* Eschsch.

Acalephæ exiguæ et maximæ motu ⊣— activo et contractilitate varia gaudentes, rarius urentes, passim phosphorescentia excellentes, hermaphroditæ?. — Corpus ovale, globosum, oblongum, sacci- v. pyriforme, apterum v. in alas binas (Cesto longissimas), 4 v. plures, liberas v. corpori ⊣— adnatas, polymorphas productum, sæpius diaphanum, gelatinosum, achroum v. colorib. dilutioribus: roseo, cœrulescente, purpureo v. fusco tinctum, glabrum, verruculosum v. maculat., solidius v. extra aquam marinam mox deliquescens. Cloaca centralis ⊣— vasta, raro nulla, hiatu antico, sæpius amplo (ore?) et postico (anali?) minori, rarius duplici v. nullo. Tubuli chyliferi intus ciliati (vasa), pone cloacam orti, ad ejus polum inferum sæpe in tubulum annularem coëuntes, abhinc bis bifidi, ad extremitatem analem descendentes et in corpus demissi ejusque rete venulosum concomitantes v. in alas producti, ctenidiis suppositi. *Ctenidia* (lineæ sæpius longitudinales v. sulci lamellis pedicellatis, biseriatis, metallico-iridescentibus, motum hemicyclicum continuum exercentibus obsiti) plerumque 8, rarius 6, 12, 9, a polo corporis postico ad anticum decurrentia v. abbreviata v. alas ornantia. *Tentacula* nulla v. 2-4, ciliata et contractilia v. nuda, flexilia, simpl. v. ramosa, e medio corpore v. pone cloacam orta, ad

basin passim hydrocystide prædita et vaginata. Processus varii, lati v. filares ad os v. infra illud, rarius ad hiatum posticum. Ovaria et testiculi pone ctenidia, ovulis per os eructandis, in quibusdam observata; nervorum vestigia in Cydippe et Lesueuria, huic et nodulus ruber centralis (oculus analis?). Natant corpore obliquo, aquam animalculis prægnantem hiatu majori suscipientes illamque minori (ni deficiat) propellentes ac ctenidiis (et tentaculis?) adjutæ. Familiæ 4 nobis, species ad 70 notæ.

FAM. 13. BEROINÆ *nob.*

Acalephæ apteræ, oviformes, ellipsoideæ, subglobosæ, campanaceæ v. bursales, —+— compressæ, cloaca et hiatu antico sæpius vastis, hiatu postico parvo, nullo? v. duplici. Ctenidia 8, rarius 4-6, conformia v. difformia et varie disposita, corpori subæquilonga v. abbreviata; ovaria et nervi?: — *Pandora*, *Cydalisia*, *Medea*, *Lesueuria*, *Pachyctena nob.* (Idya dentata Lesson), *Beroë*, *Idya*, *Neis*.

FAM. 14. CYDIPPINÆ *nob.* et Lesson.

Acalephæ apteræ, ellipsoideæ, subglobosæ v. ovi-pyri-fusiformes, cloaca fusiformi, hiatu utroque parvo, tentaculis binis posticis, longis, contractilibus, simpl., unilateraliter ciliatis, pone cloacam ortis, basi hydrocystide provisis et vaginatis. Ctenidia 8 ad hiatum posticum producta v. abbreviata, prominula, rarius 4-6, v. difformia. Species 14, genera 5? — *Mertensia?*, *Anais*, *Eschscholtzia? Iania? Cydippe*.

FAM. 15. MNEMIINÆ *nob.*

Acalephæ motu lento gaudentes, corpore ovali v. oblongo, plerumque in alas binas v. plures, heteromorphas, —+— liberas producto, cloaca fusiformi, rarius ad tubulum reducta, hiatu antico et postico, v. ultimo obsoleto. Tentacula nulla? sed processus tentaculares ciliati ad os, infra illud v. subalares, sæpius 4; ctenidia 8, 4 v. 12, in alis, corpore v. processubus, longa v. brevissima et heteromorpha. Species 20 notæ, ad gen. 10 redacta: — *Eucharis*, *Mnemia*, *Chiaia*,

*Polyptera*, *Alcinoë*, *Metropsis nob.* (Ocyroë Rang), *Bolina*, *Bucephalon*, *Calymma*, *Axiotima.*

FAM. 16. CALLIANIRINÆ *nob.*

Acalephæ corpore oblongo, in alas binas, Cesto longissimas (— ad bipedales) v. breves plures (plicatas?) producto; cloaca fusiformis, hiatu antico et postico. Tentacula 2-4, simplicia, ciliata et contractilia, hydrocystide et vagina prædita (= Cydippinis, sed inversa) v. ramosa, glabra et flexibilia. Species 8, gen. 3: — *Callianira*, *Leucothoë*; *Cestum.*

## ORGANOGRAPHIÆ

### Supplementum.

Omne vivum ex ovo ! vel rectius: omne organicum componitur ex ovulis polymorphis, discretis v. conferruminatis.

Ovula animalium sistunt vesiculas uni-bitunicatas, vitellum includentes; vitellus constans e granulis minimis compactis et guttulis oleosis solitariis v. pluribus, fovet (an semper?) vesiculam Purkinianam, huic vero inest vesicula Wagneriana nucleifera.

Utriculi pollinis (pollinia) et sporæ Muscorum, Filicum et Algarum præcipue ab ovulis vix essentialiter differunt: vitellus in cytoblastema, sæpe amyligerum, solutus v. compactior et vesiculifer; at cytoblastus nucleolatus pollinii novelli et cellulæ vitello vesiculigero jam æquiparatus erat. Vesiculæ, cellulæ s. utriculi sphærici v. elongati, e quibus textus cellulosus s. cytema et inprimis perenchyma componitur, ab ovulis simpliciorib. v. sporis itidem paucis discrepant, etsi metamorphosi successiva varias species parenchymatis effinguut, sæpius ope gelinæ inter se conferruminantur v. in membranas et fibras solidas animalium colliquescunt et rarius organismum totalem progenerare valent (Bryophyllum etc.).

Ovula igitur sunt vesiculæ s. cellulæ granuliferæ c. vesicula embryonali +— manifesta et composita, ac influxui organi foecundantis (masculini) exposita, organismo integro reproducendo inserviunt.

Organa masculina simpliciora, ad vesiculam seminalem simplicem (spernocystam) reductæ, non in omnibus animalibus inferioribus reperiuntur ac deficere videntur plantis polliniferis, ni tela carpelli conductoria interna, laxa, spermatis vices gerat, quum pollinium in embryonem perfectum non sine cooperatione carpelli v. niduli evolvatur. Spora est

analogon pollinii, sed evolvitur absque niduli (qui deficit) cooperatione; hinc pistillidia et sporangia quasi antheræ sui generis. Antheridia Muscor. Hepaticar. Filicum (Nageli) spermocystas animalium simulant, sed functio eorum hucusque latet; analogon his nullum in Polliniferis. Vid. Gottsche, *Anatom.-physiolog. Untersuchung üb.* Haplomitrium Hookeri.

Observationes novæ theoriam foecundationis plantarum pristinam infringunt, et sermonem de organis *masculinis* et *fœmineis* plantarum phanerogam. vix admittunt; nihilominus ad embryonem perfectum producendum exigitur cooperatio organorum variæ originis: pollinii phyllogeni (peripherici) et niduli caulogeni (centralis); foecundatio in stylo v. nidulo problematica: tubus pollinicus intrat nidulum, velut ovulum animale tubam Fallop. et uterum, spermate imprægnatum. Novi igitur desiderantur termini, physiologiæ consoni — et logice omnes plantæ in Sporophoras et Polliniferas discederent; flores diclini, mon-dioeci, *pollinigeri* et *niduligeri* (non masculi et fœminei) audirent. Androeceo — *Antherotium*, gynoeceo — *Neottium* (νεοττιὰ = nidus cum pullis), gynophoro — *Neophorum* v. *Carpophorum*, quod plantas novellas s. neottium et fructum gerit, ovulo — *Nidulus* (gemmula Schleiden), embryonem fovens et evolvens, ovario — *Carpellum* s. *Germen* substitui possent. Stamina epi-peri-hypogyna — *epi-peri-hyponeottica* v. *supera*, *calycina* et *infera* dicerentur; flor. polygami et androgyni = *polyclini* et *dichoclini* etc. — Admisimus interim hoc in opere signa et terminos magis usitatos, antequam lis de foecundatione plantar. perfecte judicetur — et novi termini conceptionis falsæ haud obnoxii et organologiæ sinceræ consoni confirmentur.

E multis, de Cytologia et Cytogenesi (*Zellenlehre*) a Cl. Schwan, Schleiden, Nägeli, Hugo Mohl aliisque percontatis, sequentia præcipue notare juvabit:

In aqua — omniparente elemento, coagentibus æthere (calore, luce etc.), aëre et quolibet corpore solido, excitatur

intima vis genitrix, prodit mucus, cujus granula circa vesiculam primordialem minimam, oleosam, unicam v. plures coacervata, nucleum (cytoblastum) constituunt, in vesiculam majorem s. cellulam evolvendum. Sic prodeunt quasi sua sponte corpora organica simplicissima, Algæ præprimis (Diatomaceæ, Protococcus etc.), quæ cellulas, ovula, utriculos s. vesiculas solitarias, polymorphas, activas, vario modo multiplicandas et consociandas sistunt. Hæ vesiculæ plerumque microscopicæ sunt v. majores et in seriem unicam connatæ catenulas Confervar., Nitellæ, Charæ etc. effigurant, aut singulæ in tubulos continuos longissimos Vaucheriæ exsurgunt — ac gigantes sui generis visui offerunt, quum in tubulos fere bipedales Codii extenduntur v. caulem foliatum et radicantem Caulerpæ, e cellula unica ortæ, effigurant.

Sub simili eorundem elementor. generalium anorganicorum instinctu e corporibus humidis sua sponte oriuntur species simplices Infusorior. et Fungorum, itidem e cellula unica constantes.

Multiplicantur cellulæ plantar. plerumque per *endogenesin*, quum cytoblastema cellulæ matricalis, e muco, saccharo et dextrina constans, in cytoblastos et cellulas filiales (blastidia), sæpius quaternas, evolvatur; his adultis cellula matric. plerumque disparet. *Temnogenesis* s. *divisio* Algis simpliciorib. solemnior: hic cellula primaria per septa interna in duas v. plures secundarias discedit. *Exogenesis* s. generatio extracellularis, per stolones, in Protococco observata. — Generationem cellularum secundare videtur et mucus extracellularis s. matricalis (hydras carbonei azotatus), nobis generatim *Gelina* dictus, qui e cellulis secretus, quandoque copiosus, in conceptacula amorpha v. figurata Algarum —+— solidescit, cellulas singulas obvolvit et substantiam intercellularem variam format, nec non cambium, cellulis rudimentariis refertum.

In corporibus organicis infimis quasi stamina disjuncta omnis texturæ organicae cernuntur, cujus compages cellulosa examussim differt ab illa corpor. anorganicorum, e moleculis solidis et conformibus conflatorum.

Vesiculæ organicæ s. cellulæ primitus plerumque hyalinæ et cytoblasto prædítæ v. cytoblastemate plenæ sunt, quod demum in succum coloratum, rubr. violac. v. cæruleum abit aut chlorophyllum amorphum et granulosum, viride, flavum, cœruleum, nigrum v. gonidia mobilia varie colorata et amylidia deponit; hinc cellulæ granulis vix ullis, paucis, parietalib. v. conglomeratis refertæ — *cryptogonimicæ, oligo-coelogonim.* v. *holog onimicæ* dicuntur. Cellulæ tales activæ morphosi successiva in torpidas *aëriferas* (vacuas) v. oleum, resinam et substantias crystallinas condentes abeunt — aut in ovula, sporas et pollinia transformantur, quorum tunica externa e gelina solida formatur.

Laminæ Algarum plurium nec non folia plantar. infimarum e strato unico cellular. cohærentium formatæ, *monostromaticæ* dicuntur, a laminis *di-polystromaticis* distinguendae. In lamina Ulvarum et catenulis distinguimus cellulas fulcrantes s. th. llinas (vegetativas) et oomorphas — propagativas s. ovula.

Cellulæ fulcrantes, conformes v. polymorphæ, in thallum omnivarium et conceptacula ovulorum, sporar. et spermocystarum coalescunt, raro disjunctæ sunt, adinstar thalli pulverulenti Lichenum. — *Thallus* ergo dici potest vix non omnis organorum complexus corporum amphorganicor. et Protophytor. plurium, exclusis conceptaculis organor. reproductionis aliisque organis peculiaribus, inter quæ distinguuntur *Hypothallus* et *Proëmbryon* Protophytor. ac *Mycelium* Fungorum, cujus analogon in Syncorynis et Stauridiis, phasin primariam vitæ Acalephæ absolventibus, Cl. Dujardin prædicit.

*Cytema* (tela, contextus cellulosus) e cellulis -+— coadunatis compositum, laxum v. strictum, species offert sequentes:

1. Cytema laxum: a) *Merenchyma*, e cellulis similaribus v. magnitudine diversis, sphæric. v. ovalibus, laxius aggregatis compositum. b) *Hormenchyma* s. merenchyma monilare Algar., in catenulas sæpius dichotomas coordinatum. c) *Astrenchyma* (tela spongiosa), e cellulis stellatis cum interstitiis magnis constans. d) *Plocenchyma* (tela contexta) e filis solidis v. tubulosis, rarefactis v. densis, simpl., ramosis, anastomosantib. v. varie implicatis constans, thallum totum v. certas partes ejus constituens — in Fungis, Algis, Spongiis et Lichenib. præcipue.

2. Cytema strictum: a) *Parenchyma*, e cellulis tenerioribus, arctius conjunctis, sæpius angulosis, minorib., majorib. v. variis (micro- macro- v. heterocytum) compositum. Distinguimus c. Kützingio *Epenchyma*, cujus cellulæ includunt *entocystides* (Amylidzellen, utriculi primordiales H. Mohl), et *Perenchyma*, e cellulis minoribus, gonidia in nucleum compacta includentibus *(Kernzellen)*. — b) *Prosenchyma* (tela lignosa et Pleurenchyma Meyen), e cellulis elongatis, crassis (et porosis) arcte connexis, cavitate minima gaudentib. coalescens, duritiem ligni variam determinat proportione parietum, luminis et cohæsionis cellularum. — c) *Inenchyma* (tela fibrosa et liber) e cellulis longis crassis, mollib., concatenatis et compactis constans.

In thallo heterocyto, præsertim tereti, distinguimus, præter amphidermidem gelineam, *Epithallium* et *Endothallium* (cortex et medulla); his sæpe intercedit *Mesothallium* simplex v. multiplex — polystromaticum. — Epithallium Algarum plurium e perenchymate v. hormenchymate, — mesothallium e parenchymate v. epenchymate, — endothallium vero e parenchymate vacuo v. plokenchymate effinguntur. Cellulæ ergo perenchymaticæ primigenæ et ovulis subsimiles demum in parenchyma thalli varium v. in ovula perfecta transformantur.

*Spiriductus* (vasa spiralia) varii, plantarum attributum peculiare, e parte succo crudo deferendo inservientes (?), sunt catenulæ cellularum, morphosi specifica in tubulos longissimos (a radice ad cymas arborum ?) extensæ. In Protophytis paucis vix rudimenta eorum observantur; deficiunt quandoque et aliis plantis (Ceratophyllo cæt.), officio eorum prosenchymati? imposito, ni omnis endosmosis parenchymate absolvatur.

Intra cytema, præsertim laxius, manent meatus minimi v. lacunæ majores, aërem, gelinam v. succos plantarum proprios foventes. Accedunt sæpe meatus v. *tubuli*, latice lacteo, virente, cœruleo, luteo v. rubro pleni — *vasa laticifera* et speciatim *lactifera*, a Schultzio, Hugo Mohl aliisque scrutata.

Quæ de officio cellularum, in stomatia, glandulas extern. v. internas (organa endadena *nob.*, punctata *auctorr.*) ac pilos confertarum, a Physiologis celebrata sunt, usui Organographiæ practicæ, pro re nata, adaptavimus, nec non ea, quæ Chemia, Morphologia et Teratologia Scientiæ nostræ suppeditavere.

Talis Histologia adinterim sufficiat ad exponendos characteres sectionum Regni præsertim amphorganici.

Thallus plantarum magis excultarum discedit in cormum et radicem; illis adnexa sunt varia organa vitæ individualis (vegetativæ) et reproductivæ. Terminologia solemnis horum organorum ab auctoribus superfoetata est, quin tamen ad organorum differentiam rite exponendam par sit; quare nomina multa proposita, una cum aliis Phytographis, superflua censendo et monita Cl. Hugo a Mohl, in *Botan. Zeitung*, 1843, declarata, partim sequendo, Terminologiæ nostræ additamenta hic exponimus.

Ad organa radicalia, deorsum crescentia, referuntur: *Rhizoma* centrale, simpl. v. ramosum, sæpe deficiens, et *Rhizo-*

*nia* (fibrillæ, pili radicales, radix adventitia) peripherica, gracillima v. crassissima (Pandani etc.), quandoque tuberascentia v. velata.

*Caudex* (etsi displicet Mohlio) est caulis rhizoideus, sursum crescens, polymorphus, plerumque caulis veri et rhizomatis evolutionem supprimens, scapos v. pedunculos et folia agens.

Caulis et rami *acrophylli*, nonnisi superne foliiferi, adinstar caudicis Palmarum foliis coronati.

Folia simplicissima, petiolo c. lamina confluente, v. mutilata, nec non rami foliacei quandoque *phyllodia* dicuntur; fol. *endadena* (ob glandulas internas pellucidas punctata dicta); fol. *ima*, e caule obsoleto v. caudice orta, vulgo radicalia contra leges Physiologiæ dicta; f. *brachypoda* s. subsessilia, vere composita, digitata et pinnata, foliolis basi articulatis, tandem dilabentibus. — Stipulæ non semper a foliis axillaribus probe distinctæ (vid. *Solanum verbascifolium*).

Nervus folii medianus s. carinalis *rachis* dicitur; distinguendus esset nervus marginalis s. circularis. Nervi laterales longitudinales, robusti v. graciles, folium *nervosum* (3-7-nervium etc.) v. *nervulosum* — multinervium efficiunt; fol. *clathrinervium* est nervosum, venulis crassioribus transversis interceptum (Sparganii, Caricis). Nervi laterales transversi paralleli, robusti v. graciles, itidem folia *costata* et *costulata* reddunt. Costæ flexuosæ et deliquescentes in venulas dendriticas v. reticulatas folia *venosa* et *venulosa* efficiunt. Folii *sigmoideo-nervii*, rachi deliquescente, exemplum Canna et Richardia præbent. Folia mixtinervia: nervoso-nervulosa (Majanthemi), costato-costulata (Musæ), nervoso-costulata Sagittariæ, Melastom..

*Axis floriger* (anthophorum) ⊣— diramificatus, minor pedunculum et pedicellos varii ordinis effigurat, major vero et sæpius e caudice prodiens (3-orgyalis Coryphæ) *scapus* dicendus.

*Inflorescentia* (Anthotaxis) cymosa s. centrifuga, plantis quamplurimis propria, ægre a centripeta vera distinguitur; cymæ unifloræ, sæpe 2-3-bracteatæ (epicalyx? Schleiden) v. plurifloræ umbellas v. corymbos simulant, vario coordinantur typo, speciali studio Cl. Wydleri determinatæ, generatim flores cymosi solitarii, spicati, racemosi, thyrsoidei (paniculati) v. conferti et heterotaxi audiunt; caule obsoleto quasi radicales apparent (Parnassiæ, Taraxaci cæt.). Syngeneticæ et Umbelliferæ inflorescentia generali cymosa et partialibus centripetis gaudent.

Perigonium simplex verum, monocyclum (floris incompl. Chenopodii cæt.) distinguitur a *dicyclo* similari, præsertim liliaceo, quod e *sepalidiis* et *petalidiis* ternis (4) constat, Liliaceis, Rumiceis, Laurinis aliisque familiare; perigon. 3-5-polycyclum in Menispermac., Berberideis et Magnolieis observatur. *Anthopodium* s. basis perigonii, pedicelli articulum superiorem simulans,—in Asphodeleis, Rumiceis, Brunnichia etc.

Flos completus constat ex axi proprio (anthokionis), calyce, anthemio et gynoeceo s. neottio. Quodlibet organon floris symmerum v. dialymerum, simpl. v. multiplex, liberum v. c. vicinis connatum esse solet. Sepala, petala et stamina, quandoque stipulata, ad leges folior. evolvuntur; carpella vero phyllogena v. caulogena esse solent.

*Axis floralis* s. *Anthokionis* nuda flores diclinos nudos, sed quandoque bracteatos v. perulatos Strobilanthar. effigurat, alias organa floralia plura gerit et *receptaculum* s. *thalamus* dici solet, passim in *torum* anthemii polymorphum v. in *carpophorum* s. *gynophorum*, neottio proprium, producitur; pars ejus suprema, intra neottium continuata, *endokionis* dicenda, passim stylis et spermophoro simplici, 1-∞-nidulato, v. fisso, bi-multicrureo subdatur. Axis solus (absque foliis) effigurat neottium caulogenum Leguminosar., Liliacear. et Ranunculacearum (Schleiden, Schenk).

*Anthemium* (organa floris plerumque decidua) discedit in stamina, petala, parastemones et parapetala, quibus *torus* s. *hypanthemium* polymorphum sæpe subest: adenomorphum (glandulæ hypogynæ) etc.

*Androeceum*, *Antherotium* s. *Pollinarium* more corollæ symmerum v. dialymerum esse solet; distinguitur monocyclum et isomerum v. plejo-mejomernm, nempe stamina numero petalis v. sepalis æqualia, plura v. pauciora v. ad unicum reducta; stamina hemicycla s. unilateralia, et 2-∞-cycla, quæ numero petalorum v. sepalor. duplo, triplo et multiplo sunt. — Stamina mon-di-pentadelpha v. libera variisque floris partibus inhærentia, toro extus, intus v. margini ejus innata, antepetalina, interpetalina v. antesepalina dicuntur, num opposita v. alterna sint sepalis v. petalis; alterna sæpe breviora v. abortiva.

*Antheræ* sessiles v. brachy-platy-pachynemæ (filamento brevi, petaloideo v. crasso), basi- v. dorsifixæ, *normales* dicuntur, quæ introrsæ sunt et loculis 2 appositis, parallelis, connatis et longitrorsum dehiscentibus; *anth. perischizæ* — loculis 2 oppositis, longitrorsum dehiscentibus, ab *extrorsis* veris distinguendæ; *anth. campyloschizæ* s. arcuatæ-subuniloculares v. loculis confluentibus et rima arcuata dehiscentes; *poroschizæ*, acroporæ et basiporæ, uni-biporosæ, poro 1-2 apicalibus v. basilaribus hiantes; antheræ dimidiatæ loculo altero abortivo v. nullo. — *Connexivum* apiculatum v. acradenum (glandula apicali terminatum). *Pollinia* s. utriculi pollinis et *pollinaria* (?) s. massæ pollinicæ.

*Gynoeceum* s. *Neottium* in Strobilanthis ex axi nudo, simpl v. ramoso, ramis sæpius phyllomorphis, niduligeris v. sterilibus et passim bracteatis obvallato formatur; huic proxime accedit neottium (ovarium) *axigenum* Liliac., Leguminos. et Ranunculaceae, in carpella clausa et styligera, solitaria v. plura effiguratum. Neottium *inferum* an ex axi cavo

intus niduligero, passim septato et stylis phyllogenis superis clauso formatur, an tubo perigonii innatum sit, nondum certi sumus. Neottium vero *superum* (liberum) sæpius e carpophyllis, spermophoro et nidulis componitur. Carpophylla vera et axigena generatim carpella (ovaria, pistilla) dicuntur, Strobilanthis nulla v. simplicia?, alias e germine, stylo et stigmate (= vaginæ, petiolo et laminæ folii) constant; hinc neottium mono- v. polyphyllum (simplex v. polymerum) ac more corollæ symmerum v. dialymerum esse solet. Carpella sessil. v. stipitata (gynopodiata), in carpophoro coordinata, varias inflorescentias simulant. Stipes tubo stamineo (toro?) vaginatus v. innatus (Sterculiæ etc.) *gynandrophorum* (gonio-phorum) dictus. Styli ⊣— connati neottium synstylum v. schizostylum reddunt. — *Synstylium* peltatum, radiatum, petalomorphum, fistulosum etc. Sarraceniæ, Nymphææ, Iridis, Cerei etc.

*Spermophorum* s. *Placenta* (sæpe obsoleta) centralis, endokionide ⊣— distincta (Nuphar), v. in crura duo-plura excentrica, libera, ascend. v. descendentia, carpophyllis amplexa v. parieti interno cornm innata (parietalia), intervalvaria v. medivalvia discedit. Spermophori crura 2, superne et inferne connata, *replum* Chelidonii etc. efficiunt. — *Niduli (ovula, gemmulæ)* nudi, uni-bitunicati, camptotropi, lycotropi et hemianatropi adhuc distinguendi essent, quæ omisimus.

*Fructus* simplices (mono-polyphylli), multiplices et aggregati vario modo coordinantur adinstar inflorescentiæ et differunt præcipue mesocarpii evolutione. Distinguuntur: fruct. *nudi* et *induviati* (liberi, variis organis floris durabilib. et passim accrescentib. v. alteratis velati); fruct. superi et inferi, *Amalthæa* generatim dicti, e neottio infero orti, cujus vertex ⊣— exsertus *Acromphalum* audit; *Carpomphalum* vero (hilum carpicum Bischoff) area basilaris fructus dicitur.

Fructus *kionospermi* — spermophoro axili libero v. septis adnato; fr. *teichospermi* spermophoro simpl. v. bi-multicrureo, intervalvari v. medivalvi; hoc supra valvas increscente dehiscentia porosa Papaveris prodit. Fruct. *panspermi*, seminib. v. spermophoris ramosis ex omni pariete loculorum ortis (Butomus, Nymphæa etc.). In fructibus polyphyllis unilocularib. dehiscentia *rachicida* et *marginicida* respondet loculicidæ et septicidæ. Fruct. acroschizi, poroschizi = dehiscentiæ dentatæ, porosæ etc. In amalthæis quibusdam modo acromphalum dehiscit.

Fructus superi monospermi (et oligosp.) *caryopsidem*, pericarpio adnato, hoc vero libero et tenero *utriculum* — v. crasso, duro — *Nuculam* efficiunt.

Fruct. superi polyspermi (raro 1-spermi) monophylli, sutura ventrali, rarius dorsali dehiscentes *Folliculi* dicuntur, ab hoc differt *Legumen* (caulogenum) sutura utraque sæpius dehiscens. *Siliqua* diphylla est, spermophoro septante, margine seminifero, intervalvari, ni ad fruct. monospermum reducatur. Reliqui *capsulæ* dicuntur.

Fructus *inferus*, *hypanthicus*, *calycinus* s. *Amalthaea* fere omnes formas fructus superi ludit, *bipartibilis* Umbelliferar. in hemicarpia 2, kionidi appensa, discedit. Distinguuntur: *Achænium* s. amalthæa parva 1-sperma Syngenetic. Valerian. etc.; *Nux* s. *Glans*, amalth. mesocarpio lignescente et sæpe cupula (involucro) prædita; *Pepo*, amalth. baccata magna, teichosperma, e carpophyllis 3-5 introflexis composita; *Pomum*, amalthæa baccata, folliculos 2-plures, 1-∞-spermos, v. drupas fovens.

Fructus *multiplices* s. *dialymeri* ad stylum gynophorianum verticillati *Peristylium* constituunt (Labiatæ, Boragin, Ochnac.). *Syncyclium* Aconiti etc. e fructib. variis, 2-∞, circa axin idealem verticillatis constat. *Syncarpium* e fructib. in carpophoro +— longo spicatis v. verticillatis prodit: Ranunculi, Malvæ. Fragariæ etc.

Fructus *aggregati* s. *synanthici*, e florib. 2-∞ orti et coaliti v. coacervati, *Sorosum* Ananassæ, Mori etc. effigurant. *Syconus* — receptaculum concavum multiflorum, in fructum sæpius carnosum abiens (Ficus, Dorstenia etc.).

*Strobilus*, fructus peculiaris, enigmaticus, varie interpretatus, e *spermophoro* denudato, simpl. v. ramificato prodiens, ramis sæpius phyllomorphis, imbricatis (squamis) v. peltatis, seminigeris et passim bracteatis (Coniferæ, Cycadeæ), polyspermus v. ad semina 3, 2, 1 (Juniperus, Ephedra, Taxus) reductus et ramis sterilibus (squamis, bracteis?) stipatus. An potius *carpophorum* est, carpellis caulogenis, gymnicis, fertilib., sterilibus et bracteis obvallatum — et tunc strobilus syncarpio proximus esset?

E quolibet fructu prodeunt: *Bacca*, quum cytema succulentum in mesocarpio v. in loculis et circa semina evolvatur; *Drupa*, mesocarpio in putamen durum et naucum molle efformato; *Samara*, carpophyllis e parte in alas connatis; *Pyxidium* s. fr. circumscissus; *Pyrenium* s. fruct. nucamentaceus, testa seminum lignescente.

Semen (maturum rite distinguendum) in Pseudospermis embryone amorpho v. nullo, forsan minimo, ægre inquirendo, v. e nidulo, pollen immediate (non per stylum) suscipiente, ortum. — In episperm io distinguimus strata duo: *testam* crassiorem externam et *tegmen* internum, tenerum, rarius tumidum (in exalbuminosis).

Embryo, relative ad radiculam ejus et consistentiam cotyledonum, *brachy- phyllo- sarco-spirolobus* v. *brachyrhizus* esse solet, albumini æquilongus, illo brevior v. longior et curvatus; embr. tunicatus s. sacco amniotico inclusus (endospermio et perispermio præditus); embr. *amygdalinus*, qui illi Amygdali proxime accedit.

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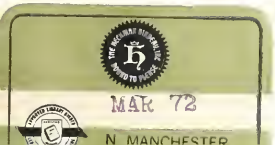
## Errata graviora.

| Pag. | lin. | Excusa sunt: | Lege: |
|---|---|---|---|
| 11. | 27. | *Enthostodon* | *Entosthodon* |
| 12. | 3. | *Atrichium* | *Atrichum* |
| „ | 29. | (Nägeli) | (Schleiden) |
| 13. | 3. | Thmesipteris | Tmesipteris |
| 17. | 20. | *Synamnia* | *Synammia* |
| 17. | 33. | *Notochlaena* deleatur | |
| 20. | 19. | epiladia | epicladia |
| 21. | 6. | Protophyta | Pteridophyta |
| 29. | 8. | Haldingera | Haidingera |
| 41. | 1. | hoc, v. similare dimorphum | similare v. dimorphum, hoc |
| „ | 27. | in = v. reduplicatis | induplic. v. reduplicatis |
| 53. | 10. | *Agpanthus* | *Agapanthus* |
| 64. | 20. | *Aplochlamis* | *Anthochlamys* |
| „ | 21. | *Agathophyllum* | *Agathophytum* |
| 76. | 19. | *Eudriandra* | *Endiandra* |
| 90. | 12. | *Didcta* | *Didclta* |
| 91. | 28. | *Callichroa* deleatur | |
| 128. | 33. | ovulis solitar. *adde:* v. geminis | collateralib., erect., anatropis |
| 134. | 10. | *Golbanum* | *Galbanum* |
| 143. | 30. | te | et |
| pag. 146—153. | | | p. 145—152. |
| 146. | 6. | 2- -cycla | 2-∞-cycla |
| 151. | 7. | *Plicurca* | *Pricurca* |
| 152. | 8. | *Licuala* | *Licania* |
| 157. | 29. | *Camaropsis* | *Comaropsis* |
| 169. | 27. | *Pachypterum* | *Pachypteris* |
| 171. | 6. | *Gioldbachia* | *Goldbachia* |
| 175. | 21. | *Manglettia* | *Manglictia* |
| 191. | 23. | *Mutisia* | *Matisia* |
| 192. | 28. | dsathulata | spathulata |
| 193. | 33. | *Cissabryon* | *Cissarobryon* |
| 198. | 16. | *Cliocoeca* | *Cliococca* |
| 208. | 16. | Tubecularieae | Tuberculariеae |
| 209. | 23. | *Phragiimidni* | *Phragmidiini* |
| 211. | 10. | *Peronspora* | *Peronospora* |
| 215. | 32. | valvato | volvato |
| 220. | 5. | acuculeos | aculeos |
| 231. | 12. | *Chrolepus* | *Chroolepus* |
| 244. | 33. | *Halisarce* | *Halisarcie* |
| 264. | 3. | Nageli | Nägeli |

Nomina generum quaedam in Indice correcta.

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